DESATOYA HERD MANAGEMENT AREA PLAN/CAPTURE PLAN UPDATE and ENVIRONMENTAL ASSESSMENT (EA) No. NV-030-03-022

4700

I. Introduction/Purpose and Need

Introduction

With passage of the Wild Free-Roaming Horse and Burro Act of 1971 (Public Law 92-195), Congress found that: "Wild free-roaming horses and burros are living symbols of the historic and pioneer spirit of the West". The Act states that wild free-roaming horses are to be considered in the area where presently found, as an integral part of the natural ecosystem of the public lands. The Secretary was ordered to "manage wild free- roaming horses and burros in a manner that is designed to achieve and maintain a thriving natural ecological balance on the public lands".

The BLM National Wild Horse and Burro Strategy includes establishing and achieving Appropriate Management Levels (AML) on all Herd Management Areas (HMA's) managed by the BLM, and to achieve and maintain AML on all HMA's implementing a 4-year gather cycle. The numbers of animals projected to be removed were estimated using a wild horse population model developed by Dr. Stephen Jenkins of the University of Nevada Reno, based on a four-year gather cycle .

The Desatoya Herd Management Area (HMA) is situated within the administrative jurisdiction of two BLM Field Offices (Battle Mountain; BMFO and Carson City; CCFO). In 1992, a Herd Management Area Plan (HMAP) was prepared for that portion of the HMA, which was within the CCFO area of administration that plan presented management direction for managing that portion of the horse population. The 1992 HMAP/Capture Plan was appealed to the Interior Board of Land Appeals and affirmed in 1996. In 1999, The Desatoya Mountains Ecosystem Management Plan was finalized, this plan assigned the lead responsibility for the Desatoya Mountains to the CCFO, the Desatoya Mountains Ecosystem Management Plan also set the Appropriate Management Level (AML) for the horse population in the BMFO portion of the HMA. After approval of this plan the AML for the entire HMA was set.

Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*) are a threatened species and occur within the HMA. They require specific habitats that are characterized by cool water, pools in close proximity to cover and velocity breaks, well vegetated and stable stream banks and relatively silt free rocky substrate in riffle-run areas. "Principle threats to LCT include: Habitat loss associated with livestock grazing practices..." This Plan incorporates the Recovery Plan for the Lahontan Cutthroat Trout, 1995, by reference.

This plan update supercedes the old plan and presents management direction for the entire Desatoya HMA. The terms horse and wild horse, both (*Equus caballus*) are used synonymously throughout this document.

The Desatoya HMA is located approximately 75 miles east of Fallon, Nevada. The topography of the HMA ranges from flat valleys through mountainous terrain from 1,525m to 3,040m in elevation. Portions of the HMA boundaries are formed by existing fences (map 1).

It is generally accepted that wild horses within the HMA originated from ranch stock that were released.

The HMA contains approximately 161,700 acres of public and private land within the Battle Mountain and Carson City Field Offices (CCFO). Four grazing allotments (South Smith Creek 23%, Porter Canyon 81%, Clan Alpine 3%, and Edwards Creek 24%) occur within the HMA. The HMA includes the entire herd area delineated as the wild horse habitat after (1975) passage of the Wild Horse and Burro Act, P.L. 92-195 (map 1). In the 1992 Clan Alpine AMP the Bell Flat Allotment was incorporated as a winter pasture in the Clan Alpine Allotment. Therefore, all acreages and AUM's referring to the Clan Alpine Allotment will pertain to the summer pasture (original allotment) unless otherwise stated.

The dominant vegetation consists of pinyon pine (*Pinus monophylla*), big sagebrush (*Artemisia tridentata*), low sagebrush (*A. arbuscula*), Nevada ephedra (*Ephedra nevadensis*), Indian ricegrass (*Oryzopsis hymenoides*), pine bluegrass (*Poa* spp.), Nevada bluegrass (*Poa nevadensis*), Sandberg bluegrass (*Poa secunda*), Thurber needlegrass (*Stipa thurberiana*), Idaho fescue (*Festuca idahoensis*), and bottlebrush squirreltail (*Sitanion hystrix*).

Portions of the HMA lie within the Desatoya Wilderness Study Area.

Purpose and Need

The purpose and need of these actions are to achieve and maintain the HMA in a state of thriving natural ecological balance and multiple use relationship between the wild horse population, wildlife, livestock and the plant communities. In addition horse specific information would be collected to assess the overall health of the horse population. Specific objectives include managing the population to preserve and enhance the historic physical and biological characteristics of the herd and preserving and maintaining a healthy viable wild horse population within the HMA.

Land Use Plan Conformance Statement

The proposed actions and alternatives described below are tiered to and in conformance with the Carson City Field Office Consolidated Resource Management Plan of 2001 (CRMP), pages WHB –1-5 and the Shoshone Eureka RMP/EIS (1986). This analysis was conducted under an intensive monitoring program addressing the impacts of wild horses and livestock. This EA is a project specific refinement of the EIS focused on the management of wild

horses in the Desatoya HMA. The Appropriate Management Level (AML for the Desatoya HMA was established through the allotment evaluation and FMUD process. All AMLs were set as a range.

The following decisions from the CRMP affect the Desatoya HMA:

1. Page WHB-2, decision 2- Maintain sound thriving populations of wild horses within HMAs.

2. WHB-3, decision 1 - Develop and implement an HMAP for the Desatoya HMA.

3. WDL-2, decision 4 – Maintain and improve wildlife habitat, including riparian/stream habitats, and reduce habitat conflicts while providing for other appropriate resource uses.

4. WDL-2, decision 5 – Maintain or improve the habitat condition of meadow and aquatic areas. Habitat condition for any wildlife species can be defined as the ability of a specific area to supply the forage, cover, water and space requirements of an animal. Habitat condition, therefore, is a measure of habitat quality, and is determined by assessments, surveys and studies.

5. WDL-2, decision 6 – Maintain or improve the condition of the public rangelands so as to enhance productivity for all rangeland values (including wildlife).

Relationship to Other Environmental Documents, Statutes and Regulations

The proposed action and alternatives are in conformance with the Wild Free-Roaming Horse and Burro Act of 1971 (PL 92-195 as amended); all applicable regulations at 43 CFR 4700 and policies; the Strategic Plan for the Management of Wild Horses and Burros on the Public Lands; and the Nevada BLM Revised Tactical Plan – Wild Free-Roaming Horses and Burros, Ensuring the Legend Lives Free. These documents are available for public review at the Carson City Field Office.

In June of 1992 the Director of the BLM signed the Strategic Plan for Management of Wild Horses and Burros on Public Lands. This document provides goals and objectives for the management of wild horses and burros including:

a. Target specific age groups for removal.

b. Target a specific sex for removal.

c. Utilize fertility control techniques.

d. Nevada and Wyoming will use a selective removal strategy with fertility control that will assure that AML's are reached within a six-year time frame.

The authority for the proposed actions within this plan is contained in 43 CFR 4710.2, 4710.4, 4720.1, 4740.1, 4740.2 and the Wild Horse and Burro Act of 1971 (Public Law 92-195). In 43 CFR 4710.3-1 the authorized officer is directed to prepare Herd Management Area Plan (HMAP) for the management of HMA's.

Other Activity Plans, Issues and Constraints

Existing Activity Plans have stated objectives and constraints relating to the HMA, and are summarized below.

1. Multiple Use Decisions 1992:

In 1992 Multiple Use Decisions (MUD's) were issued for the 2 grazing allotments involved in the Desatoya HMA (CCFO portion). These decisions divided the available forage between wildlife, wild horses and livestock. Specific Appropriate Management Levels (AML's) were set for each allotment (43 horses Clan Alpine Allotment; 55 horses Edwards Creek Allotment) with a total HMA maximum AML of 98 horses. These numbers were based on vegetation monitoring with the goal of achieving a thriving ecological balance between wildlife, wild horses, livestock and the vegetative community. Wildlife use within the allotments was adjudicated in accordance with the Lahontan RMP - 1984.

2. Desatoya Mountains Ecosystem Management Plan 1999:

This document set the AML for the South Smith Creek and Porter Canyon Grazing Allotments at 15 and 67 respectively.

3. Range Program Summary Update 1989 (now incorporated into the CRMP):

a. Maintain utilization not to exceed 55% on key species on upland key areas (Range Program Summary Update 1989; RPS Update).

b. Improve ecological condition in 20 years by 1 condition class (RPS Update, 1989).

c. Maintain or improve willow and aspen stands to have at least 20% of all stems produce young over 5 feet (6 feet for aspen; RPS Update, 1989).

d. Limit utilization on meadows in identified sage grouse habitat to leave a minimum of 4" of growth by 15 September (RPS Update, 1989).

e. Reduce stream-bank damage on Edwards Creek (which maintains a fishery), to less than 20%; Stream-bank vegetation utilization not to exceed 30% (RPS Update, 1989). Manage riparian areas to achieve and maintain late-seral ecological condition (RPS Update, 1989).

f. Limit utilization to 55% on current years growth on riparian areas (RPS Update, 1989).

g. Insure against adverse physiological stress to wild horses by monitoring water availability (RPS Update, 1989).

h. Maintain or improve wild horse habitat consistent with wildlife and livestock objectives (RPS Update, 1989).

i. Maintain or improve free roaming behavior of wild horses by protecting or enhancing wild horse home ranges (RPS Update, 1989).

j. Manage identified mule deer (*Odocoileus hemionus*) habitat to maintain a good (51-75 rating) or better (RPS Update, 1989). Limit utilization to 55% on identified key species in identified mule deer habitat.

k. Manage identified bighorn sheep (*Ovis canadensis nelsoni*) habitat to maintain a good condition habitat rating to help support 300 sheep yearlong (RPS Update, 1989).

4. Allotment Management Plans:

There are allotment management plans for both the Clan Alpine and Edwards Creek allotments.

5. Wildlife Habitat Management Plan:

The Desatoya Range Bighorn Sheep Habitat Management Plan (HMP) was prepared for this area in 1986. The Nevada Department of Wildlife (NDOW) expressed concern over resource conflicts between the bighorn sheep and wild horses. However, it was felt that if the wild horse numbers were maintained at a low level conflicts could be overcome. Potential exists for competition between wild horses and bighorn sheep because of their dietary overlap and the ability and willingness of wild horses to move into the rugged bighorn sheep habitat (Hansen, 1982). The Desatoya Mountains have also been nominated as an Ecosystem Management/Biodiversity Project Area in the 1993 Preliminary Annual Work Plan.

Generally the objectives of the HMP and this plan do not conflict, as there are few conflicts between the animals if the total utilization on key grass species is limited to 55% or less.

However successful sage grouse nests (*Centrocercus urophasianus*), are surrounded by residual grass cover that is 18 cm or higher, measured as drop height, therefore, horse and livestock numbers may need to be reduced in order to provide nesting habitat for sage grouse.

The 1989 RPS Update identified as an objective the need to provide 360 AUMs for bighorn sheep and 402 AUM's deer yearlong, the HMA only encompasses part of the sheep and deer range.

II. PROPOSED ACTION

The Proposed Action and five alternatives, one of which is the No Action Alternative, are analyzed within this document and impacts identified. The description of all the alternatives is given below.

A. Animal Objectives

Objective 1

Maintain the wild horses in good or excellent physical condition.

Management Method

Provide an adequate amount of forage for the individual horses in the population by adjusting the population of wild horses to a level in balance with the forage productivity of the habitat within the HMA (Habitat Objective 1 and requirements of wildlife and livestock). Based on the analysis of monitoring data under Habitat Objective 1, providing a proper amount of forage per animal would allow the animals to maintain themselves in a healthy condition, better able to withstand environmental fluctuations.

Prior to future removals current monitoring data will be analyzed to determine if the AML's set in the multiple use decisions are still appropriate. Future gathers may be postponed if current data indicates that the HMA can support an increased horse population. Also, future gathers may decrease the horse population below the minimum AML if current monitoring data indicates that the AML is too high for current range conditions.

Objective 2

Maintain the free-roaming nature of the wild horses.

Management Method

All projects proposed on BLM administered land within the HMA will be carefully evaluated

through an environmental assessment process as to their effect on free-roaming behavior and movement of wild horses.

Objective 3

Maintain the wild horses within the HMA.

Management Method

Improve the habitat within the HMA and identify key habitat areas within the HMA through monitoring efforts. Maintain the fences along allotment boundaries where they form part of the HMA boundary.

During periodic population reductions, horses gathered outside of the HMA will not be released back into the HMA (to the extent possible) because they would likely return to the area from which they were removed (Waring 1979, Tyler 1972 and observations of released horses within the CCFO). Any wild horses located outside of the HMA would receive priority for removal.

Objective 4

Minimize the adverse effects of gathers to both the individual wild horses and the population.

Management Method

Maintain an interval between removals of at least 3 to 4 years. By managing within the range set through the MUD process would increase the time interval between captures, thereby reducing stress, injuries and deaths associated with capture operations.

Wild horses have an average rate of increase of between 14% and 24% annually (Garrott, 1990). From monitoring data, an annual growth rate of at least 19% can be expected under reasonable population levels in this HMA. By reducing the population of wild horses within the HMA to a point below the maximum number of wild horses that the habitat can support and allowing the population to build back up to the maximum level the next removal could be delayed for 3 to 4 years. The number of wild horses would not exceed 180 and would help achieve Habitat Objective 1.

Various forms of contraceptives (Strategic Plan) may be used to slow the rate of increase. Currently the most promising treatment is effective for approximately 2 years, and is administered via an intra-muscular injection.

If wild horses were only reduced to 180, gathers would need to be conducted yearly which would lead to frequent band disturbances and other forms of stress. Furthermore, yearly gathers would not be physically or fiscally feasible. Removal procedures are contained in Appendix 1. Maintain the wild horses population within the range of 127 - 180.

Utilize a helicopter to herd horses into corrals constructed out of portable steel panels. Other motorized equipment would also be used in the transport of captured horses.

Nursing mares or foals, which have become separated from their nursing mares, may need to be roped. However, based on past removals it is anticipated that less than 1 percent of the animals would require roping.

The Bureau of Land Management may contract with a private party for the removal operation. If a contractor is used he/she would be supervised at all times by Bureau employee(s).

Objective 5: Place only adoptable horses into the adoption program.

Management Action: To the extent possible only animals less than 10 years of age would be placed into the adoption program, other excess unadoptable horses would either be released into another HMA, placed into a sanctuary or released back into the Desatoya HMA. However, during the next gather and possible subsequent gathers horses 5 and under would be placed into the adoption program, horses 6 through 10 would be released back into the HMA and older animals placed into a sanctuary, although some of the animals 6 through 10 may be removed if needed to reach AML.

Once the Bureau attains AML on a national basis, and gathers occur on a 3 to 4 year cycle AML's would be maintained by only removing younger more adoptable and adaptable animals.

Place horses removed from areas outside of the HMA into the adoption program, sanctuaries or other HMA's regardless of age.

Objective 6: Maintain and improve riparian areas.

Management Action: Maintain the horse population at a level compatible with habitat objective 2, in certain cases constructing enclosures around springs, seeps and creeks may be necessary. If removal of excess horses does not allow for riparian vegetation to become reestablished on springs and seeps and horses are shown to be the cause, exclosures will be constructed around the springs.

Objective 7: Identify individual animals for population studies, fertility studies and to

facilitate identification of animals illegally removed from the HMA.

Management Action: Using freeze- marking techniques, a unique number may be placed on the left hip of the animals that are to be returned to the HMA. These horses are restrained in a squeeze chute for ageing and vaccination if given, by applying a freeze mark the animals would be restrained for an additional 90 to 120 seconds.

Objective 8: Track loss of heterozygosity and alleles.

Management Action: During periodic removals blood samples would be drawn from some of the captured animals for analysis. As with applying a freeze mark this action would only add 90 to 120 seconds of additional squeeze chute time for the horses identified to be sampled, and would result in negligible additional increases of stress.

Objective 9: Identify prevalence of distemper.

Management Action: During periodic removals nasal swabs maybe collected from some animals. As with applying a freeze mark this action would only add 90 to 120 seconds additional of squeeze chute time for the horses identified to be sampled, and would result in negligible additional increases of stress.

Objective 10: Maintain genetic diversity.

Management Method

Animals from other HMA's within this Field Office may be released into the HMA to allow for gene flow, thereby avoiding any deleterious affects of inbreeding resulting from small population size.

B. Habitat Objectives

Objective 1

Allow no more than 55% utilization on key plant grass species (Indian ricegrass, Idaho fescue, needle grass; RPS update 1989) and 40% on interim grass species (bottlebrush squirreltail and bluegrass) yearlong on previous years growth by March and maintain >= 18 cm of residual herbaceous cover in sage grouse nesting habitats.

Management Method

As stated (vegetation section) the present stocking rate over the entire riparian heavy use areas needs to be adjusted downward. Based on current data an adjustment of the horse

population within the HMA is required.

One of the grazing allotments within this HMA may not have a utilization problem while the others may. This is because each allotment has unique characteristics and the wild horses do not evenly distribute themselves throughout the HMA. Therefore, Appropriate Management Levels (AML's) were set by allotment so that if 1 allotment is being over utilized corrective actions can be taken on the problem allotment, while letting the horse population grow on other allotments within the HMA. The alternative to this approach would be to set the AML for the entire HMA based on the allotment with the most limiting resources. This would necessitate removal of horses in the other allotments at levels below the carrying capacity (potential maximum AML). Moving horses between allotments would not be practical in this situation because the horses would likely return to their original home range (Waring 1979, Tyler 1972, CCFO observations).

Objective 2

Maintain 10 cm of grass cover on wet meadows by 15 September (RPS Update 1989). Avoid excessive use of springs and riparian vegetation.

Management Method

As stated (vegetation section) the present stocking rate over the entire riparian heavy use areas needs to be adjusted downward. Based on current data an adjustment of the horse population within the HMA is required. Herbivore numbers need to be maintained at levels, which do not adversely impact the hydrology, soils or vegetation in riparian zones. Maintaining the populations at proper levels would be an important action, however, some areas would require fencing to maintain vegetation and function.

Objective 3 Maintain springs at Proper Functioning Condition.

Management Method

Technical References TR-1737-15 1998 and TR –1737-16 1998 will be used to asses spring condition. If horses are found to be preventing the attainment of the objective, either or both a reduction of the AML or construction of exclosures will be implemented.

ALTERNATIVES

Alternative 1

Alternative 1 is identical to the proposed action with the exception that the population would only be reduced to the upper end of the AML.

Alternative 2

Alternative 2 is identical to the proposed action with the exception that a contraceptive is not used.

Alternative 3

Alternative 3 is identical to the proposed action with the exception that only contraceptives would be utilized to control the populations.

Alternative 4

Alternative 4 is identical to the proposed action with the exception that the population would only be reduced to the upper end of the AML and that a contraceptive is not used.

No Action Alternative

The no action alternative would not include any of the objectives and management actions.

Alternatives considered but not analyzed

Herding from horseback and water trapping were considered, however, they are not feasible for this HMA. The only possible exception would be if a small number of horses became a nuisance on private property, such as alfalfa fields where a small strategically placed trap may be practicable.

III AFFECTED ENVIRONMENT

PROPOSED ACTION

General Setting

The HMA is centered around a portion of the Desatoya Mountains, elevations range from approximately 1,525m to 3,040m. Habitats vary from salt desert shrub to alpine. Permanent water is available in three perennial creeks (Edwards, Smith and Topia) and numerous springs and seeps. The HMA includes a portion of the Desatoya Wilderness Study area.

Critical Elements of the Human Environment

The following critical elements of the human environment are not present or are not affected

by the proposed action or alternatives in this EA:

Air Quality
Areas of Critical Environmental Concern
Cultural Resources (trap sites would be surveyed prior to construction)
Environmental Justice
Farm Lands
Flood Plains
Hazardous Materials
Native American Religious Concerns
Paleontology (trap sites would be cleared prior to construction)
Wild and Scenic Rivers

Resources Present:

III A. Wildlife

The HMA includes habitat for bighorn sheep, mule deer, mountain lion (*Felis concolor*), sage grouse, prairie falcons (*Falco mexicanus*), golden eagles (*Aquila chrysaetos*), chukar partridge (*Alectoris chukar*). Spring snails may exist within the HMA this plan incorporates the Spring snail Conservation – National Memorandum of Understanding and IB 99-156 by reference. Most bird species found within the HMA are protected under the Migratory Bird Treaty Act, in addition golden eagles are protected under the Bald Eagle Protection Act.

III B. Threatened or Endangered Plant Species

There are no known threatened or endangered plant species within the HMA, however, potently Elko rockress (*Arabis falcifructa*) a BLM special status species and a U.S. Fish and Wildlife Service species of concern could exist within the HMA. In addition Reese River phacelia (*Phacelia galabberima*), a species on the Natural Heritage Program watch list could also occur within the HMA.

III C. Threatened or Endangered Animal species

Lahontan cutthroat trout (threatened) is the only known threatened or endangered animal species within the HMA. The BLM has constructed 11 separate fences along Edwards and Willow Creeks (Willow Creek is outside of the HMA) to protect Lahontan cutthroat trout habitat. These fences were constructed as a result of formal section seven consultation with the U.S. Fish and Wildlife Service. Prior to the summer of 1992, when Topia Creek dried up Lahontan cutthroat trout were found in Topia Creek, however, since Topia Creek is a seasonally connected tributary of Edwards Creek Lahontan Cutthroat trout have likely reestablished themselves in Topia Creek. Lahontan cutthroat trout have also been established

in Upper Dens Creek, which is outside of the HMA. These populations of Lahontan cutthroat trout are significant for management purposes as they may be genetically related to the original Pyramid Lake strain and could be used as broodstock or as a source for reintroduction or supplementation efforts.

Nevada Department of Wildlife (NDOW) is concerned that the sage grouse (a BLM Special Status Species) habitat may be deteriorating. Furthermore NDOW has released bighorn sheep within the HMA. If the sheep population is to be maintained it is crucial that bighorn sheep habitat be maintained in good condition. Two category 2 candidate species, the northern goshawk and loggerhead shrike nest in the area. Spotted bats, another category 2 candidate may also use the area (yet to be documented).

Pygmy rabbit (*Brachylagus idahoensis*) also a BLM special status species) may occur within or near the HMA.

III D. Water Quality (Surface/Ground)

There are 3 perennial streams, 1 of which contains Lahontan cutthroat trout (Edwards Creek) and 1 that may contain Lahontan cutthroat trout (Topia Creek) additionally there are numerous springs and seeps. Some of the springs (approximately 7 identified to date) require protection because of excessive trampling caused by livestock and wild horses. Currently 90 percent of the portion of Edwards Creek that lies on public land is fenced to protect the riparian vegetation and associated habitat for Lahontan cutthroat trout. The buffer zone of the exclosures varies depending upon the topography, hydrology and vegetation, though generally extends 60 or more meters into upland vegetation types.

III E. Wetlands/Riparian

Numerous riparian areas and wet meadows occur within the HMA. The dominant riparian vegetation varies among sites from aspen, chokecherry, rose and willow, to sedge dominated communities. These riparian areas and wetlands are found along most of the drainages and canyons within the HMA

The Desatoya Mountains Ecosystem Management Plan (1999) stated that some riparian areas are being over utilized by both horses and cattle. Use pattern mapping has documented over use of riparian vegetation and excessive trampling of wet meadows and streams this has lead to a degraded range. Also, some springs have been degraded and are no longer in a state of thriving ecological balance. Some springs have had all of their associated riparian vegetation removed (heavy and severe use) and hoof action is compacting the soil, which could decrease or stop the flow of water.

III F. Wilderness

A portion of the HMA lies within the Desatoya Mountains WSA. This WSA is recognized as having exceptional scenic quality, and outstanding opportunities for solitude and primitive recreation. A recognized special feature of the WSA is the opportunity to view horses in a spectacularly beautiful natural unconfined setting.

III G. Migratory Birds

Many species of migratory birds inhabit the HMA, including blue birds, shrikes, night hawks, swallows, swifts, fly catchers, kingbirds, raptors, owls, hummingbirds, warblers, finches, juncos, wrens, sparrows, requiring diverse habitat types.

III H. Wild Horses and Burros

The HMA contains approximately 161,700 acres of public and private land within the Battle Mountain and Carson City Field Offices (CCFO) the AML range for the entire HMA is 127-180. At the present time, the wild horses have unrestricted movement within the HMA and the majority of the allotments. Some of the wild horses are using areas outside of the HMA, as all or part of their home range. This is primarily due to an increase in the population beyond that which the HMA can support. The latest census was conducted in January 2002, and resulted in a total of 435 wild horses counted inside and outside of the HMA. An estimated 42 wild horses (Appendix 4) occupied the HMA in 1971, after the passage of the Wild Horse and Burro Act.

III I. Invasive, Nonnative Species

Two noxious weeds, hoary cress (whitetop; *Cardaria draba*) and Russian knapweed (*Centaurea repens*), have been identified within the HMA. Hoary cress is found along Edwards Creek road and Russian knapweed was found in Bassie Canyon and treated with herbicides.

Other Resources Present:

III J. Livestock Use

The HMA lies within 4 grazing allotments. The Clan Alpine, Edwards Creek, Porter Canyon and South Smith Creek grazing allotments have 9,200, 3,492, 7,241 and 3,834 AUM's of active grazing preference respectively. In 1992 an AMP for the Clan Alpine Allotment added the Bell Flat Allotment to the Clan Alpine Allotment as a winter pasture, which increased livestock AUM's for the Clan Alpine Allotment to 11,410.

Allotment	Numbers	Season of Use	AUM	Non Use	Active AUMs
Clan Alpine	258	1Jul – 31 Aug	516		1,443*
Edwards CR.	299 16	1 May – 31Mar 1 May – 30Apr	3,300 192		3,492
Porter Can.	603	16Apr – 15Apr	5,653	1,588	7,241
S. Smith CR.	647	16May –31Oct	3,834		3,834

*Includes portions outside of the Desatoyas

Approximately 90% of Edwards Creek was fenced to protect the habitat of Lahontan Cutthroat trout.

III K. Recreation

Traditional forms of recreation such as sightseeing, driving for pleasure on roads and ways, camping, hunting, hiking, photography and nature study occur within the Desatoya Mountains Wilderness Study Area (WSA).

Interpretive signs directing the public toward areas frequented by wild horses may be erected. However, since the only road access to this HMA passes through private land a legal right-of-way would need to be negotiated before public access could occur.

III L. Soils

The Desatoya Mountains, in which the HMA lies, are typical of the north-south trending mountain ranges within the Great Basin. Soil parent material consists primarily of extrusive Tertiary rhyolitic flow materials. On the steeper slopes and at higher elevations, soils are typically shallow or lithic (less than 14 inches depth), with high percentages of coarse fragments (gravels, cobbles, and boulders) throughout. Percent organic matter can vary, but is usually relatively high in these high elevation soils. Soil reaction in these high elevation soils is slightly alkaline. Soil temperature regimes in these soils is cryic in the highest elevations, and frigid in the Pinyon-Juniper zones.

Soils on mountain valley slopes and alluvial fans with moderate to gentle slopes typically will range in depth from moderately deep to very deep (>40 inches), and will contain a wide range of coarse fragments within the soil profile. Organic matter percentages within these soils are consistently higher, and the soil reaction (pH) lower in areas within the mountain range than on the alluvial fans in Edwards Creek Valley. Soil temperature regimes in the lower elevation mountains are frigid on north exposures and mesic elsewhere.

The most productive soils, are the riparian soils (soils adjacent to perennial creeks, springs, seeps etc.). Compared to these riparian soils, the vegetative production of the majority of

soils within the HMA would have to be considered relatively poor because of shallow depths, high percentages of rock fragments and steep slopes.

The description of the affected environment for Alternatives 1- 4 and the No Action Alternative would be the same as that for the proposed action.

III M. Sensitive Plant Species

There are no known sensitive plant species within the HMA, however a buckwheat, (*Eriogonum beatleyae*), is located immediately north west of the HMA near U.S. 50.

IV. ENVIRONMENTAL CONSEQUENCES

Proposed Action

IV A. Wildlife

Wildlife species have specific habitat requirements that vary between species and are generally related to various plant communities or stages of plant communities. Some species such as sage grouse have very specific habitat requirements during certain phases of their life history, while other species have less specific requirements. By managing for specific habitat requirements where known (sage grouse for instance) and in other cases managing for healthy diverse plant communities (riparian and upland) the needs of most wildlife species will be met.

Managing horses within a range of 127 to 180 (total utilization <= 55%) would have positive impacts on wildlife by insuring adequate forage, cover and space for wildlife species. This horse level would help in providing habitat requirements for wildlife.

During capture operations, the helicopter will be operated in a manner to avoid any golden eagle aeries.

IV B. Threatened or Endangered Plant Species

There are no known threatened or endangered plant species within the HMA, however, generally by managing horses within the AML range impacts to the plant community would be within the tolerance range of most plant species. Trap sites would be selected to avoid Elko rockcress and Reese River phacelia (special status and watchlist species respectively) should they occur within the HMA.

IV C. Threatened or Endangered Animal Species

As habitat improves Lahontan cutthroat trout would benefit as would the special status species found within the HMA. If the horses are managed at AML they would not be expected to occupy areas outside of the HMA precluding any impacts too Willow and Upper Dens Creeks or their tributary springs. All actions under the proposed action would benefit Lahontan cutthroat trout by increasing the quality of their habitat through the reduction of grazing on riparian vegetation and trampling of springs and seeps that feed into Edwards and Topia Creeks.

All actions outlined within this plan will have positive benefits toward Lahontan cutthroat trout. These positive benefits will occur in the form of increased water quality as a result of decreased grazing pressure on riparian vegetation and protective exclosures around springs and seeps for which the reduction of horse numbers was not adequate to correct over use. As the grazing pressure decreases riparian vegetation and structure will increase, thereby reducing erosion, trapping sediment and shading the creeks and springs. Trap sites will be situated away from riparian areas.

Habitat for pygmy rabbit (if present) and sage grouse would be expected to improve as the grazing pressure will be reduced allowing grasses and forbs to compete more effectively with sagebrush. Sage grouse and pygmy rabbit require different habitat types though both require sagebrush with a healthy grass and forb component.

IV D. Water Quality (Surface/Ground)

By managing the horse population within the AML range water quality would be improved and the need to construct protective exclosures would be lessened but not eliminated. Riparian vegetation along springs and seeps that feed into Edwards and Topia Creeks would improve decreasing the temperature and turbidity thereby improving habitat for Lahontan cutthroat trout. Some springs and seeps would still incur compaction due to trampling as horses obtain water, these springs would be fenced and the water would either flow out from under the exclosure or would be piped a short distance to a trough.

As riparian vegetation reestablishes along creeks siltation would decrease as would summer temperatures thereby increasing water quality for Lahontan cutthroat trout. Spring snails if present would also benefit from increased water quality and the construction of spring exclosures in areas where over use by horses persists.

IV E. Wetlands/Riparian

As horses obtain water the resultant mechanical action of their hoofs compacts the soil stressing and sometimes killing native vegetation, creating sites conducive for establishment

by nonnative invasive species. Also, as the number of horses increases sites around water sources including riparian vegetation sustain greater use. The more palatable riparian species sustain greater use while the less and unpalatable species benefit from less competition and tend to dominate riparian areas, reducing the value to wildlife.

Managing horses between 127 to 180, a level which can be maintained by the vegetation (<= 55% total use) compatible with other uses (wildlife & livestock grazing) would result in the vegetative community being maintained or improved. By reducing and limiting the horse population some riparian areas would recover naturally, however, some riparian areas would require protection in the form of enclosures to recover and maintain the vegetative diversity associated with them and required by a plethora of animal species. During years of lower population levels the vegetation may incur benefits associated with less grazing pressure and disturbance to horses associated with removal operations would be minimized.

Riparian areas would be improved under the Proposed Action or all Alternatives other than the No Action Alternative. By maintaining the horse population at a level compatible with the ability of riparian vegetation to resist the deleterious effects of grazing riparian vegetation would improve, decreasing erosion. Establishment of noxious plant species will be inhibited by achieving and maintaining a healthy riparian plant community.

IV F. Wilderness

The Bureau's Interim Management Policy and Guidelines for Lands Under Wilderness Review (IMP) define the current standards for management of the WSA. The Bureau will manage the lands under wilderness review in a manner so as to not impair the suitability of the area for preservation as wilderness, and take action to prevent unnecessary or undue degradation of the lands and their resources.

A temporary use or activity that does not create a surface disturbance or involve the permanent placement of structures may be allowed if it can be easily and immediately removed. New range improvements such as fencing and spring development would be approved only for the purpose of enhancing wilderness values by better protecting the rangeland in a natural condition. In such cases the improvements should not require motorized access and are to be substantially unnoticeable.

In addition the overall wilderness value would be enhanced as riparian areas improve providing esthetically pleasing strips of lush green native vegetations accented by the surrounding sagebrush communities.

IV G. Migratory Birds

By managing the herbivores (horses and livestock) so that the vegetation is maintained at

levels stated in the CRMP, Shoshone Eureka RMP/EIS, Sierra Front Northwestern Great Basin Area Standards and Guidelines, habitat requirements for most species of migratory birds would be expected to be met. Riparian areas, including wet meadows and other areas providing herbaceous vegetation, such as aspen groves, rose and willow thickets are crucial to many migratory birds because these areas provide nesting and foraging sites. Many species of migratory birds rely on the insects and other invertebrates associated with riparian vegetation.

Sagebrush, grasslands, mountain mahogany, pinyon pine and juniper communities also provide important nesting and foraging areas for migratory birds. Some migratory birds are sagebrush obligates including sage grouse, sage sparrow (*Amphispiza belli*) sage thrasher (*Oreuscoptus montanus*) and vesper sparrow (*Pooecetes gramineus*). These various species of birds (and others) require sagebrush for all or part of their life history. However, the specific sagebrush habitat requirements differ widely between species, for example sage grouse require nesting habitat with residual grass cover of 18 cm or more and pre-nesting and brood rearing habitat with a mix of forbs and grasses interspersed between sagebrush which generally equates to sagebrush canopy cover between 15 to 25 percent. However, sage thrasher, require thick relatively tall (1 m) sagebrush for nest concealment. Therefore, to manage for all sagebrush obligates (including reptiles and amphibians) various types of sagebrush communities need to be managed for throughout the landscape on large scales.

Maintaining and recreating some of these conditions would likely require further management of herbivores, and may require reductions in grazing use in sage grouse nesting habitat or riparian areas.

All actions as a result of this plan will be done compliance with Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds.

IV H. Wild Horses and Burros

The main issue with this HMA involves the propensity of the horse population to increase at relatively high rates (15 - 20% annually). Few adult horses or foals within this HMA succumb to predation the only "natural" population regulating mechanism would be the availability of forage. However, before the horse population would be limited many native species of wildlife would have been eliminated from the HMA and surrounding area. Also, many native plants would have disappeared facilitating the establishment and expansion of non-native noxious weeds. When unchecked a population of horses can have devastating effects on native vegetation, wildlife and the livestock industry

By managing the population of horses within the AML range a healthy population would result, insuring the persistence for generations to come.

From analysis of monitoring data it was determined that 180 horses are the maximum that the HMA can support while maintaining thriving natural ecological balance between vegetation, horses, wildlife and livestock. In order to minimize the stresses and disruption of band structures the population of wild horses would be reduced below 180 and allowed to increase back to 180. Based on recent rates of increase (19% annually) the population would need to be reduced to 127 animals in order to maintain acceptable utilization levels during gather intervals.

Managing horses between 127 - 180 a level, which can be maintained by the vegetative community with other uses, would minimize the stresses to the individual horses associated with limited food and space resources. Minimizing the stresses would be especially important to the young animals. Managing the population in a way that maximizes the intervals between removals minimizes the stresses associated with removals. Managing horses in harmony with their habitat and maximizing intervals between removals would result in only positive benefits (i.e. reduced stresses to the animals and a healthy vegetative community). Furthermore, it is not physically or fiscally possible to capture horses in the same HMA every year. If horses were allowed to increase above the AML, resource damage would occur adversely affecting the vegetative community, wildlife community, horse population, livestock producers and recreationalists who would be disappointed in seeing degraded communities lacking species diversity.

Managing the wild horses within a range (i.e. 127 - 180) would require that the population be reduced below the maximum allowable population level (180). A healthy viable population would be maintained.

Reducing horses below the maximum number (AML) that the habitat can support in concert with the other uses (i.e. wildlife and livestock grazing) would reduce the stress of gathers by allowing an interval of approximately 3 to 4 years between gathers.

Using chemical or mechanical contraceptive techniques to slow the rate of increase would result in fewer animals captured and placed in the adoption program. This would result in positive impacts to both the animals and the taxpayer by minimizing the number of excess animals requiring removal and long-term placement.

Applying contraceptive techniques to a proportion of the population would slow the rate of increase. This would allow greater intervals between gathers which would result in less disturbances and stress to the horses and reduce the need to place horses into the adoption program or other long-term storage facilities.

Applying reversible contraceptives randomly throughout the target age classes would minimize artificial selection, would have minimal impact to the genetic make up of the population and allow the population to continue to adapt to a free roaming existence. In

addition any deleterious effects associated with inbreeding would be reduced since the generation time would effectively be increased if the target group were comprised of younger age classes. In effect generation time could be maximized and excess horses minimized by delaying pregnancy in mares until they reach their late teens. If each mare gave birth to 1 surviving female offspring the population could be maintained and removals would be avoided along with the tremendous expenses of adoption or long-term storage.

Specific contraceptive techniques chosen would most likely be delivered via intramuscular injections and would be reversible with time. Treating mares with contraceptives delivered intramuscularly would not increase the handling time or stresses ordinarily involved with capture operations because the older animals (>2 years old) are restrained in a squeeze chute to determine age. While the mares are being aged an intramuscular injection would be delivered.

The release of unadoptable horses from other HMA's would tend to increase allelic diversity and would be expected to compensate for alleles lost by stochastic events thus maintaining heterozygosity. Furthermore, introduction of new genetic material would aid in maintaining and increasing the natural variability of the population. All impacts would be positive.

Prior to the extirpation or near extirpation of the ancestral horses from which the domestic breeds were derived and consequential feral horse populations, the progenitor wild horses were likely distributed in large out breeding populations. However, for a variety of reasons present day feral horses cannot be managed in large populations due to land use practices, and vegetative constraints on population size. In addition, the Wild Horse and Burro Act, limited management of "wild" (feral) horses to the geographic area which they inhabited in 1971. However by moving animals between HMA's we can in a genetic sense link the HMA's creating a large outbreed population of horses.

During periodic removals, animals captured from areas outside of the HMA would either be placed into the adoption program, released into other HMA's or released back into the HMA as far from the point of capture as possible. However, horses are likely to return to their home ranges after release (Tyler 1972, Waring 1979 and post release census flights). Therefore, releasing animals back into the HMA would only be done when other alternatives are not practical or available.

Discussion has occurred regarding the appropriate sex ratio for free ranging populations of horses. It is intuitively obvious that fewer excess animals would result from biasing a population to favor male animals, however, some individuals have asserted (without any data to substantiate their claims) that if the percent of males surpasses some threshold civil unrest would occur resulting in increased aggression between males as they now must divide up fewer females between them. Based on 70 years of collective experience managing free roaming horses in this field office we doubt the before mentioned scenario, once horses have

established a hierarchy few subsequent bouts of aggression occur. In any "natural" population of feral horses the majority of males will not control harem bands, they will be found either singularly or in small loosely knit bands. We believe that biasing a population to favor males would result in smaller harem bands and more and or larger bachelor bands, which would not adversely impact the social structure of the population with the only effects being positive, fewer animals would need to be removed and placed into the adoption program and the duration between gathers may be increased. Unfortunately we do not have any data to substantiate our assertion therefore, we did not consider this option for an alternative.

Within the Carson City Field Office 3,665 (49.5%) female wild horses have been removed and 3,732 (50.5%) male horses have been removed (wild horse and burro data base). Thus, the gather data suggests a slight bias, favoring males; in addition, during gathers a disproportionate percentage of females are collected due to the inherent biases of the gather techniques. Male horses are found in smaller bands or singularly, decreasing their rate of delectability also bachelor bands do not herd as effectively as harem bands. Because pilots contracted to gather horses are paid per horses captured they focus on harem bands thus, to a certain extant ignoring bachelor bands, resulting in a biased sex ratio at the trap site.

Unfortunately we do not have any data on the magnitude of the trap site bias. However, intuitively one would suspect a greater percentage of male horses than female horses in a "natural" setting. This bias would result from greater number of females dieing after birth due to the increased stresses of reproduction and lactation including parturitions gone terribly bad, resulting in the death of the mare. A mare must divert a substantial amount of energy to produce a foal and ensuing lactation for the next year or more, increasing her susceptibility to adverse environmental conditions and predation by mountain lions.

Male horses while they control a band also undergo increased stresses compared to their bachelor cohorts. However, due to the keen competition for females, harem-controlling males will generally loose control of harems long before their physical condition is compromised to a dangerous level. Thus, the sex ratio is not at parity and males tend to accumulate in the population. Therefore, we contend that biasing the sex ratio to favor males would not be "unnatural" and have only positive effects for the population and the taxpayer.

A combination of removing young animals and treating older animals with contraceptives would result in removing only readily adoptable animals (young animals) and slow the rate of increase. However, for the next 1 or 2 removals it is expected that some older animals would need to be removed in order to attain AML, these horses would be placed in sanctuaries. Once AML is reached and removals occur approximately every 4 years a minimal number of animals would need to be placed into the adoption program and the interval between gathers could be maximized. Leaving the older horses (10 years and older) in the population would preserve the genotypes that have proved most adapted to the free roaming existence. The

exact method or combination of methods would be determined prior to each gather and influenced by adoption demand, current rate of population increase and efficacy and cost of contraceptives and range condition. To insure no adverse impacts upon the population would occur, the most intensive case was analyzed using a program developed by this Office. However, it is unlikely that it would be fully implemented. The most intensive case was to remove 90% of the animals 9 years of age and younger and to prevent conception in 90% of the remaining females for 2 years. This scenario would postpone the need for a subsequent removal for approximately 6 years.

The fertility control utilized at this time would be PZP with Freund's Complete Adjuvant administered in one injection, expected to provide contraception for two years. This treatment would be done on an experimental basis, thus we would mark and monitor the mares the second and third year after treatment to asses the efficacy. Fetuses would not be affected by the treatment. If other drugs become available they may be utilized in future treatments.

A program developed by Stephen Jenkins (WinEquus, version 1.40, April 2002) was used to compare possible outcomes of various management scenarios designed to provide individuals interested in population dynamics an understanding of possible population responses to various management strategies was run for the targeted population levels of this HMA using several scenarios, namely: removals only, removals and fertility control, fertility control only and no management. Dr. Jenkens does make the disclaimer that this model should not be used to make management decisions, the intended use is to convey a range of possible population responses to certain perturbations. These different scenarios provide a forecast regarding the number of expected excess horses in the future, which would be considered when selecting the preferred alternative and described in appendix 3.

Under the removal only scenario the median population size over 21 years was 162 and the median number of animals removed was 472 exclusive of the number required during the first removal. Using the removal and 2 year fertility control scenario the median population size over 21 years was 166 and the median number of animals removed over 20 years was 406 exclusive of the number removed during the first removal, under a 2 year contraception only scenario the median average population was 474 which is unacceptably high and this scenario assumed an initial removal to bring the population down to the lower AML. Uunder the no management scenario the median population size was 1,017 with an ending median population of 3,538 and a highest trial population of 6,576. Obviously the HMA could not sustain a population of 970 horses much less a population of 4,123. Before the population reached these levels the HMA would have been converted to a veritable desert with noxious weeds pine and juniper trees the only remaining vegetation, most species of native wildlife would have disappeared and the allotments involved would no longer be capable of supporting livestock.

Additionally several scenarios of only reducing the population to the upper AML level were examined. Obviously under these scenarios with the birth of the first foal post removal the HMA would be over AML, thus over stocked. The AML range was designed to prevent over stocking and the problems associated with over stocking. Under the removal only scenario where the population was only reduced to the upper AML the median population size over 21 years was 261 and the median number of animals removed was 778 exclusive of the number required during the first removal, using the removal to upper AML and 2 year fertility control scenario the median population size over 21 years was 222 and the median number of animals removed over 20 years was 496 exclusive of the number removed during the first removal to obtain the upper AML.

Clearly maintaining the population within the AML range results in fewer total animals removed over the 20 year time frame.

Results from Dr. Jenkens's model:

Table 1. Rate of Increase and Median number of horses removed under the different alternatives.

Alternative	**Median Pop. Size**	**Rate of Increase**	**Median # Removed 20 yr.**
Proposed Action, Removal & Fert. Control	166	13.6%	406
Alternative 1. Removal Only to Upper AML & Fert. Control.	222	13.8%	496
Alternative 2, Removal Only	162	20.7%	472
Alternative 3, Fert. Control Only	474[1]	12.7%	0[1]
Alternative 4, Removal Only to Upper AML	261	19.7%	778
No Action	1,163[2]	19.8%	0[2]

[1]At the end of 20 years the median population was 474, however, the median maximum was 1,206 and the highest trial was 2,158 animals, clearly the efficacy or the current contraceptives needs substantial improvements to affectively manage a population without removals.

[2]At the end of 20 years the average median population was 1,017, however, the maximum median population was 3,538 and the maximum, from the highest trial was 6,157.

See appendix 3 for population parameters and more detailed results.

IV I. Invasive, Nonnative Species

The establishment and spread of invasive nonnative species would be discouraged by maintaining a healthy native vegetative community which would only be possible by maintaining the horse population within the AML range.

Other Resources Present:

IV J. Livestock Use

By managing horses at the identified levels forage would be available for grazing by livestock which would help meet RMP objectives and would allow a thriving ecological balance to be obtained and maintained between the vegetative community, wildlife, horses and livestock. This would result in positive impacts. The vegetative community, horse populations and wildlife populations would be stabilized. It is anticipated that after the reduction the utilization would decrease to 55% on key species. Horses that are removed would be placed into private maintenance through the Bureau's Adopt a Horse Program, sanctuaries or other HMAs.

IV K. Recreation

As the habitat improves, the esthetics would improve as would most wildlife populations, increasing the overall recreational experience.

IV L. Soils

By maintaining a healthy plant community soil erosion would be reduced.

IV M. Sensitive Plant Species

Trap sites and holding facilities will not be placed where *E. beatleyae* is known to occur.

ALTERNATIVES

Alternative 1

Alternative 1 is identical to the proposed action with the exception that the population would only be reduced to the upper end of the ALM, however, with the birth of the first post gather foal the population would be over AML and the horse population would not be in a state of thriving natural ecological balance. However, due to budgetary constraints this alternative

may need to be selected. The horse population would be over AML, however, the numbers would be substantially less than the current numbers and there would be improvements within the vegetative community, though not as great as would be expected under the proposed action. It is expected that alternative 1 would only be selected for the first gather implemented under this plan and that the horse population would be reduced to the lower AML during subsequent gathers/removals implemented under this plan.

All resources would be substantially improved over the current situation, although some long-term effects may return as the population increases.

Alternative 2

Alternative 2 is identical to the proposed action with the exception that a contraceptive is not used. Impacts would be identical to those analyzed in the proposed action with the exception that more foals would be born resulting in an increased number of excess horses that would need to be removed from the HMA and placed into the adoption program. This would increase the overall cost of managing horses within the HMA as more frequent gathers would be required and overall more horses would need to be removed.

Alternative 3

Alternative 3 would only utilize contraceptives, due to the relatively short duration of the current contraceptives the horse population would be maintained at an unacceptably high number causing environmental problems including excessive utilization of the plant community and the horse population would not be in a state of thriving natural ecological balance.

All resources would be adversely impacted due to substantial excessive use incurred by the vegetative community.

Alternative 4

Alternative 4 is identical to the Proposed action with the exception that a contraceptive is not used and the horse population is only reduced to the upper AML. Impacts would be identical to those analyzed in the Proposed Action with the exception that more foals would be born resulting in an increased number of excess horses that would need to be removed from the HMA and placed into the adoption program. This would increase the overall cost of managing horses within the HMA.

All resources would be substantially improved over the current situation, however, some effects would be incurred, though to a much lesser degree than would occur through adoption of the No Action Alternative.

No Action Alternative

The No Action Alternative would not include any of the objectives and management actions. The wild horses would not be maintained at a level compatible with their environment, and would continue to increase. Eventually all or most riparian areas would be destroyed resulting in the loss of many native species of animals and plants, the upland grasses would also be removed resulting in the loss of many other species of animals including sage grouse. As the grasses become over grazed sagebrush and other woody plants become dominant, also as the native vegetation, both riparian and upland grasses become stressed by over grazing invasion by non-native weeds is facilitated, both the encroachment of woody plant species and establishment of invasive weeds may be irreparable, potentially changing the range site for many decades, certainly longer than any of our planning horizons.

The vegetation (quantity, quality and species evenness) would eventually decrease to a point, which could no longer support the horse population. At this point a large proportion of the horse population would die along with wildlife and livestock. However, prior to the population crash the habitat would have deteriorated, and undesirable exotic invader species such as halogeton (*Halogeton glomeratus*), cheatgrass (*Bromus tectorum*) and Russian thistle (*Salsola kali*) would have established themselves over large areas. Thus, the HMA's capacity to support horses would now be only a small fraction of its current potential capacity and it would take many decades of low or no grazing pressure and tremendous vegetative manipulation at a huge cost for the HMA to recover to its former potential carrying capacity. The no action alternative would also preclude attainment of wildlife, soil, water and livestock objectives in the RMP and advance the need to list the sage grouse as a threatened or endangered species under the Endangered Species Act.

Habitat improvement would not be realized with this alternative. The frequency of key species would decline. The animals would continue to search for food and further degrade their habitat, thereby reducing the carrying capacity of the area, which would eventually lead to unacceptable adverse physiological stress to the horses and degraded vegetation condition.

Over utilization within and outside of the HMA would continue to occur and as the range becomes further deteriorated the carrying capacity of the HMA and allotments would be reduced. The objective of limiting utilization to 55 percent or less would never be met. Downward trend would occur, and ecological condition would decline. In the long-term, the excessive utilization would eliminate nearly all the forage plant species. Attainment of RMP objectives would not be met.

Further deterioration of the range would occur and the area would not be in a state of thriving ecological balance between wild horses, wildlife, vegetation and livestock. Also, potential watershed impacts could have adverse effects on Lahontan cutthroat trout.

Resources would be adversely effected compared to the Proposed Action or Alternatives 1-4 as the vegetative community would sustain substantial over use.

Mitigating Measures

Under the Proposed Action or the Alternatives, that include managing the horse population within the AML, range no mitigation is necessary. Under the No Action Alternative or the Alternatives where the population is only reduced to the upper AML, no mitigating measures are practical.

Cumulative Impacts

Cumulative impacts are impacts on the environment, which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively major or problematic actions taking place over a period of time.

Past, proposed and reasonably foreseeable actions that may have similar effects to the Desatoya HMA horse population would include past removals and future removals. Four removals have been completed in the past, and future gathers and removals would be scheduled according to a 3-4 year gather cycle. Should the Proposed Action be implemented the horse population would be maintained at a level compatible with the vegetative community and other uses, a thriving natural ecological balance would be achieved. Should Alternative 1 be selected the horse population would be over AML with the birth of the first post removal foal, however, the adverse impacts to the vegetative community would be substantially less than the no action alternative. Due to budget constraints Alternative 1 may be selected for the first removal action of this plan. Cumulative effects of both the Proposed Action and Alternative 1 would include continued improvement of the range condition, and riparian-wetland condition. Additional cumulative beneficial effects from implementation of the Proposed Actions or Alternatives 1 to wildlife, the horse population and domestic livestock would occur as forage availability and quality is maintained and improved. Water quality and riparian habitat would also continually improve. .

Adverse cumulative impacts, would occur if the No Action Alternative is implemented, these effects would include continual over utilization of vegetative resources, which would result in decreased vegetative density, plant vigour, seed production, seedling establishment, and forage production. This would ultimately result in decreases of the ecological status of plant communities.

With continued over use on upland sage grouse habitat a negative adverse cumulative impact to this species would occur. Wildlife, migratory birds, and horses would all be negatively affected

by these adverse cumulative impacts to natural resources.

Wild horses would continue to expand onto private lands and other areas outside of the HMA negatively impacting private property.

Based upon these considerations, the effects of other existing and reasonably foreseeable future activities including the Proposed Action and Alternatives 1, 2 and 4 would not cause a major affect to the environment. The No Action would cause a major impact to the environment.

There would be no known adverse cumulative impacts to any of the resources analysed in this document as a result of the Proposed Action or Alternative 1.

Monitoring

A. Animal Studies

The studies described below are designed to monitor the attainment of the specific management objectives developed for this HMA.

1. Actual Use

Need: It is necessary to continue collecting data on the number and kinds (wild horses, wildlife and livestock) of animals, which are utilizing the forage within the HMA in order to make quantifiable decisions with regard to wild horse, cattle and wildlife numbers by season of use.

Method: Helicopter censuses would be the method used to estimate the wild horse population in conjunction with on the ground identification of individual animals. These censuses would occur at 3-year intervals or less. Actual use by wild horses would be derived from population estimates.

2. Demography

Need: Data are needed on the foaling rate of mares and the survival rate of foals and adults in order to determine the rate of increase. Also data on the sex and age structure of the herd is needed.

Method: Capture data, ground and aerial observations will provide baseline data. This will aid in determining the efficacy of different management strategies. Data will be analyzed using baseline parameters specific to this HMA where applicable. Age structure and annual rates of increase have been obtained from past gathers and aerial census. Also, age specific mortality and fecundity rates may be obtained from published data (Feist 1975; Wolfe 1980,

1989; Eberhardt 1982; Seal 1983; Siniff 1986; Garrott 1990a, 1990b, 1991a, 1991b, 1991c, 1991d; Eagle 1992).

3. Genetic Diversity

Need: Data are needed to monitor the genetic diversity of the herd.

Method: As the animals are aged blood samples will be drawn and later analyzed by a private contractor in order to monitor changes in allelic frequencies in accordance with the Gather Policy and Selective Removal Criteria for Wild Horses, Washington Office IM 2002-095. Minimum sample size is 25% of the upper end of the management range or a minimum of 25 samples, though no more than 100 samples will be needed from any one HMA. A veterinarian or other trained personnel would collect the blood samples.

4. Characteristics

Need: Data are needed regarding the historical physical characteristics of the herd.

Method: During the sorting of captured animals color and size would be recorded. The general characteristics would also be noted. Also, incidence of undesirable genetically determined traits, such as albinism, and club feed etc., will be documented.

5. Condition Class

Need: The physical condition of the animals is needed to assess overall herd health.

Method: The condition class would be recorded using the Henneke System for those animals that are exceptions to the average, such as noticeably thin, or fat.

Distemper Research Data Collection

Need: Cases of distemper periodically erupt at holding facilities however it is unknown whether the animals contract latent distemper perhaps from the soil at the facilities or if a few infected individuals infect other horses once they arrive at holding facilities.

Method: As part of the ongoing distemper research conducted by Colorado State University (CSU), biological samples may be collected from horses captured during gather operations. BLM field personnel would be responsible for identifying animals expressing clinical signs of *Streptococcus equi* and/or *S. zoo* infection, and for collecting and forwarding a nasal swab sample for each animal expressing signs of respiratory disease to CSU-Center of Veterinary Epidemiology and Animal Disease Surveillance Systems. Animals would be sampled if the following criteria were met:

1. Nasal discharge from one or both nostrils that is white/green or cloudy white or
2. Abscesses under or behind the jaw, whether intact or open.

B. Habitat Studies

The Lahontan Resource Area Vegetation Inventory of 1980-1982 collected the following data on ecological condition classes for sites in the allotments other than woodland and seedings, which represent approximately 71% of the Clan Alpine Allotment. These condition classes were allotment wide (the HMA was not sequestered).

Table 2. Percent Ecological Condition

Allotment	Early Seral	Mid Seral	Late Seral	PNC*
Clan Alpine	5%	60%	34%	1%
Edwards Creek	3%	57%	32%	8%

*Potential Natural Community (PNC)

The selection of studies methodology and key area/key species to which these studies are correlated was made in accordance with procedures established in the Nevada Rangeland Monitoring Handbook (NRMH) and the District's Monitoring Plan. There are 2 key areas within the HMA. Key areas are selected based on distance from water, typically receive moderate to heavy use, exhibit moderate potential and fair ecological condition, provide a significant amount of the available forage and are a likely indicator of any change of vegetation quality or quantity.

1. Utilization

Implementation of Habitat Objective 1 would require maintaining utilization levels at or below 55% on key grass species (Indian rice grass, needlegrass and Idaho fescue; level recommended in the Nevada Rangeland Monitoring Handbook), and to 40% on bottlebrush squirreltail and Poa. Ten centimeters or more on wet meadows, 18 cm or more in sage grouse nesting habitat and meet riparian objectives in riparian areas.

Need: To determine the amount of use (degree of utilization) attributable to wild horses, livestock and wildlife.

Method: Utilization studies would be conducted prior to cattle turnout in dual use portions of the HMA. In addition to this, utilization data would be collected on the entire HMA at the end of each livestock- grazing season. All utilization studies would be done using the Key Forage Plant Method. Each point where a utilization transect is run would be considered a

study area and the location would be shown on the appropriate topographic map. (Outlined in BLM Handbook TR4/ 400-3 p. 11). Use pattern maps would then be constructed from these studies, showing relative areas and intensity of utilization.

2. Trend

Need: Trend refers to the direction of ecological change or forage condition. It indicates whether the rangeland is moving toward or away from its potential or specific management objectives.

Method: Frequency transects at key areas are read every 5 years.

3. Ecological Status

Need: Ecological status is determined by the present state of the vegetation and soil production of an ecological site in relation to the potential natural community for that site. Ecological range condition would be measured for each key area following MH 4400-1 guidelines (Natural Resource Conservation Service Range Handbook) to assure progress towards
desired seral stages.

Method: Once key species are identified a key area condition transect would be done. Key area condition transects would be re-evaluated upon measurement of a statistically significant change in frequency data. These results would be evaluated to determine change in frequency data (trend). Furthermore, results would also be evaluated to determine if the appropriate objectives have been realized. (Refer to Nevada Rangeland Monitoring Handbook p. 13).

Evaluation

All adjustments in livestock and wild horse use in the Desatoya HMA would be based on rangeland monitoring. Monitoring information would be collected and evaluated on a yearly basis in accordance with the Nevada Rangeland and Monitoring Task Force Recommendations.

Utilization results and use pattern maps would be analyzed to determine if Habitat Objective 1 is being achieved. Actual use would be used in conjunction with utilization data in revision of the numbers in the plan. Horse and cattle numbers may be adjusted either $\pm$ as utilization results indicate. Cattle adjustments would be based upon monitoring as described in the AMP's specific for each allotment. Future Multiple Use Decisions may amend the numbers specified in this plan.

Riparian areas provide critical habitat to many species of wildlife including nesting sites for northern goshawk and wet meadows for young sage grouse. Riparian areas comprise less than 5 percent of the habitat in Nevada though these areas are critical for over 90 percent of the species during some part of their life history.

The ultimate aim for horse management is the attainment and maintenance of a thriving "natural" ecological balance between the vegetative community (uplands and riparian) and the herbivorous including wildlife and livestock. To these ends herbivore management is constrained by the ability of the vegetative communities to resist the adverse effects of grazing.

Depending on specific situations the limiting components could be upland vegetation or riparian vegetation. Livestock and to a lesser degree horses tend to seek out riparian areas in the hot months, often compacting the soil and removing excessive amounts of vegetation.

Residual grass cover of 18cm or more is an essential component for good nesting success of sage grouse. While the grass community likely could be maintained at utilization levels which remove more then 18cm of residual growth, in sage grouse nesting habitat 18 cm of residual growth would be the limiting factor in herbivore management. Likewise in many situations the upland vegetation may be able to cope with herbivory levels that are detrimental to the riparian communities, therefore the utilization on riparian vegetation would be the driving factor in determining herbivore numbers.

Adjustments in wild horse numbers would be based on the results of utilization studies (III. B. 1.) with the objective of limiting total vegetation use within the HMA to 55 percent or less on key species and 40 percent on interim species in upland areas and leaving 18cm or more of residual grass cover in sage grouse nesting areas.

Lahontan cutthroat trout require well-vegetated stable stream banks and relatively silt free rocky substrates. Principle threats to Lahontan cutthroat trout include habitat loss associated with livestock and feral horse grazing practices and poor water quality (Recovery Plan for Lahontan Cutthroat Trout, 1995, U.S. Fish and Wildlife Service). By implementing the management actions outlined in this plan siltation and summer temperatures would be reduced by increasing riparian vegetation and reducing hoof action at spring sours and small creeks including the head -waters of Topia Creek.

The Range Program Summary Update of 1989, provided specific objectives for riparian management which are still valid and include managing riparian areas to achieve and maintain late-seral ecological condition and limit utilization to 55% of current years growth and limit utilization on meadows in identified sage grouse habitat to leave a minimum of 10cm of growth by 15 September. Maintain or improve willow and aspen stands to have at least 20% of all stems producing young over 1.52m (1.83m for aspen in height), and stream

bank vegetation utilization not to exceed 30%.

By maintaining the vegetative communities in a healthy state availability of ample forage resources would be assured for all of the herbivores thus the horse population would be maintained in a healthy state in balance with the vegetative, wildlife (including migratory birds) and livestock communities.

The formula for calculating proper use:

$$\frac{\text{Actual use (AUMs) Average/Weighted Average Utilization}}{\text{Potential Actual Use (AUMs) Desired Average Utilization}}$$

When total utilization increases above 55 percent on key species and 40 percent on interim species, or when sage grouse habitat objectives or riparian objectives are not attained a gather would be conducted to bring the wild horse population to a level consistent with management objectives (see also II., A., objective 4.).

Horses that have established home ranges outside of the HMA would be removed as soon as is practical.

Results of the soil monitoring studies would also be used as an indication of attainment of Habitat Objective 1 and 2.

Helicopter censuses would be the method used in identifying the need for removals in accordance with Animal Objective 1.

Young/adult ratios may indicate that removals need not be as frequent as estimated or they may indicate that more animals need to be removed or contraceptives employed.

Animal distribution and use pattern mapping would be used to reevaluate important water sources.

Prior to future removals current monitoring data will be analyzed to determine if the AML's set through the multiple use decision process are still appropriate. Future gathers may be postponed if current data indicates that the HMA can support an increased horse population. Also, future gathers may decrease the horse population below the minimum AML if current monitoring data indicate that the AML is too high for current range conditions.

Modification

This plan may be modified if data from studies and experience indicate that changes are

desirable. Also, animal numbers and ranges may be modified through Multiple Use Decisions, which would result from ongoing monitoring.

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V. CONSULTATION AND COORDINATION

List of Prepares:

John Axtell, Project Lead/Wild Horses
James M. Gianola, WH&B Program Lead
Peggy Waski, Cultural Resources
Terry Knight, Recreation, Visual Resources
Rick Brigham, T&E Species, Wildlife
Denise Adkins, Range Resources
Dean Kinerson, Vegetation
James DeLaureal, Soils/Invasive Non-Native Species
Jim Schroeder, Water Resources
Terri Knutson, Environmental Coordinator

Persons, Groups or Agencies Consulted:

This draft HMAP / Capture Plan and EA update has been sent to the following persons, groups and government agencies in order to solicit comments.

American Horse Protection Assoc.
American Humane Association
American Mustang and Burro Assoc.
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Animal Protection Institute
Ann Kersten
Barbara Flores
Barbara Hakala
BO-K Explorations
Carl Slagowski
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Churchill County Board of Commissioners
Craig C. Downer
EHNI Enterprises
Elaine Letcher
Friends of Nevada Wilderness
Fund for Animals
Gary McCuin, Agriculturist
Harry Brown
Henry Filippini
Homestake Mining Co.
International Society for the Protection of Mustangs and Burros
Jan Nachlinger
Jerry Masterpool
Jerry Todd
Jim Baumann
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Joe Dahl
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National Mustang Association
National Wildlife Federation
Natural Resources Defense Council
Nevada Cattlemen's Association
Nevada Commission for the Preservation of Wild Horses
Nevada Department of Wildlife, Region I.
Nevada Humane Society
Nevada State Clearinghouse
Nevada State Division of Agriculture
Nevada State Grazing Board
Nevada Wilderness Assn.
Nevada Wilderness Project
NORA
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Steve Foree
Steven Fulstone
Synergy resource Solutions Inc.
The Mule Deer Foundation
The Sierra Club
The Wilderness Society
U.S. Fish and Wildlife Service
U.S. Humane Society
Wild Horse Organized Assistance

VI. APPENDICES

Literature Cited

Allendorf, F.W. and N. Ryman. 2002. The Role of Genetics in PVA. Pages 50-85 in S.R.

Beissinger and D.R. McCullough, editors, Population Viability Analysis. The University of Chicago Press, Chicago and London.

Bowling, A.T. Wild horse parentage and population genetics, Final Research Report to USDI, BLM.

Bowling, A.T. and R.W. Touchberry 1990. Parentage of Great Basin feral horses. J. Wildl. Manage. 54(3):424-429.

Caughley, G. 1977. Analysis of vertebrate populations. John Wiley and Sons, New York, N.Y. 234pp.

Eberhardt, L.L., A.K. Majorowicz and J.A. Wilcox 1982 Apparent rates of increase for two feral horse herds. J. Wildl. Manage 46(2):367-374.

Eagle, T.C., E.D. Plotka, R.A. Garrott, D.B. Siniff and J.R. Tester 1992. Efficacy of chemical contraception in feral mares. Wildl. Soc. Bull. 20:211-216.

Falconer, D. S., and T.F C. Mackay 1996. Introduction to quantitiative genetics. 4th editioh. Lhngman, London, United Kingdom.

Feist, J.D. and D.R. McCullough 1975. Reproduction in Feral Horses. J. Reprod. Fert,. Suppl. 23:13-18.

Garrott, R.A. 1990a. Demography of feral horse population in the western United States, PhD. Thesis Univ. Minn. 130pp

Garrott, R.A. and L. Taylor 1990b. Dynamics of a feral horse population in Montana. J. Wildl. Manage. 54(4):603-612.

Garrott, R.A., D.B. Siniff and L.L. Eberhardt 1991a. Growth rate of feral horse populations. J. Wildl. Manage. 55(4):641-648.

Garrott, R.A., T.C. Eagle and E.D. Plotka 1991b. Age-specific reproduction in feral horses. Can. J. Zool. Vol. 69.

Garrott, R.A. 1991c. Feral horse fertility control: potential and limitations. Wildl. Soc. Bull. 19(1).

Garrott, R.A. 1991d. Bias in aging feral horses. J. Range Manage. 44(6):611-613.

Garrott, R.A. and D.B. Siniff 1992. Limitations of male-oriented contraception for controlling feral horse populations. J. Wildl. Manage. 56(3):456-464.

Hansen, Michael C., 1982. Diets of mule deer, pronghorn antelope, California bighorn sheep, domestic cattle, and feral horses in northwestern Nevada. Unpublished report to cooperators 45pp.

Lande R. 2002, Incorporating Stochasticity in PVA. Pages 18-40 in S.R. Beissinger and D.R. McCullough, editors, Population Viability Analysis. The University of Chicago Press, Chicago and London.

Natural Resources Council, 1991. Wild horse populations: field studies in genetics and fertility, National Academy Press, Washington, D.C. 41pp.

Ralls, K., and J.D. Ballou. 1983. Extinction: lessons from zoos. Pages 164-184 in C.M. Schonewald-Cox, S.M. Chambers, B. MacBrysde and W.L. Thomas, editors, Genetics and conservation: a reference for managing wild animals and plant populations. Benjamin/Cummings, Menlo Park, California.

Seal, U.S. and E.D. Plotka 1983. Age-specific pregnancy rates in feral horses. J. Wildl. Manage. 47(2):422-429.

Siniff, D.B., J.R. Tester and G.L. McMahon 1986. Foaling rate and survival of feral horses in western Nevada. J. Range Manage. 39(4):296-297.

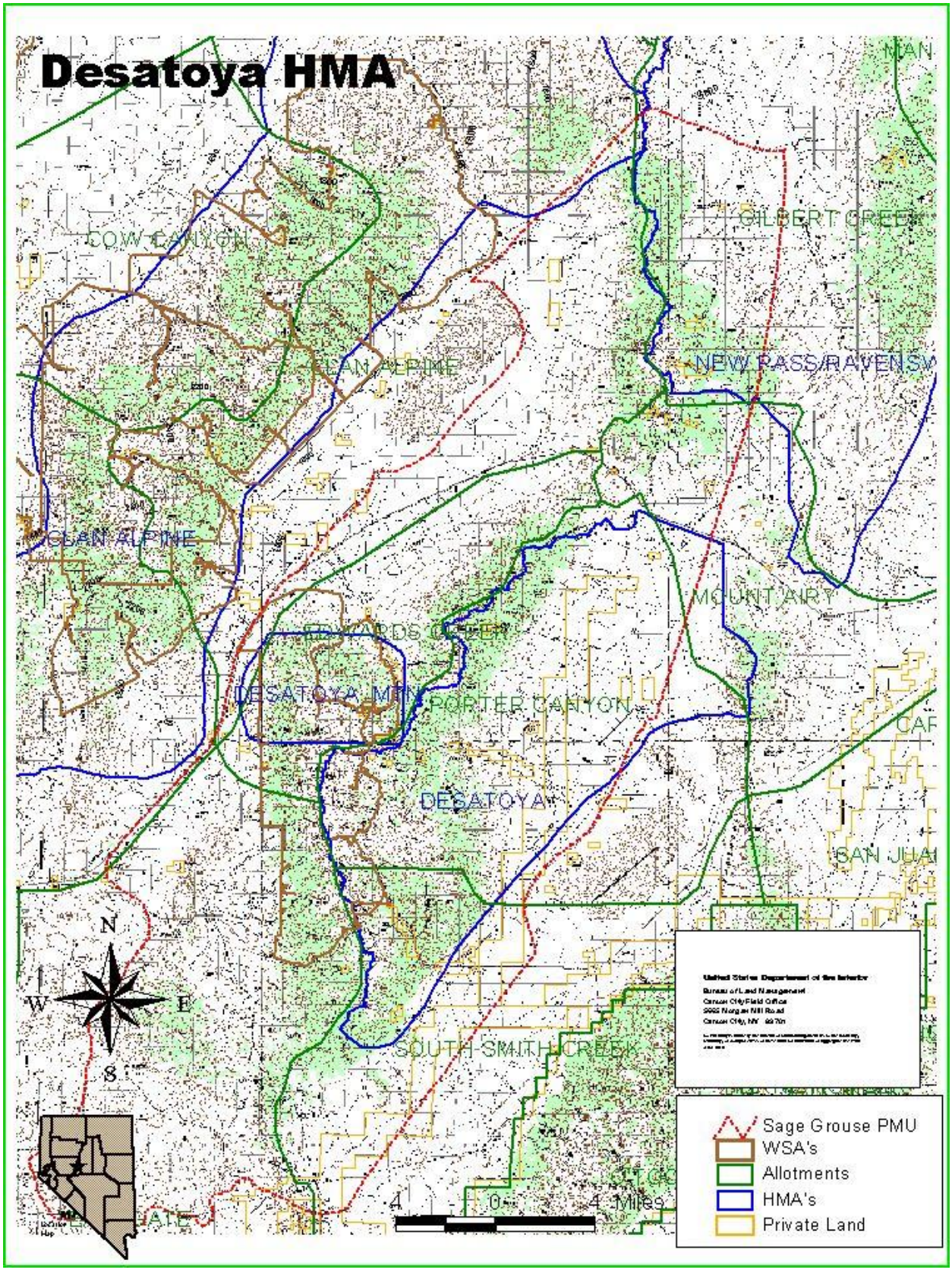
Tyler, S.J. 1972. The behaviour and social organization of the New Forest ponies, In Animal Behaviour Monographs Eds., Cullen, J.M. and Beer C.G., Oxford England pp 87-196.

Wolfe, M.L. 1980. Feral horse demography: a preliminary report. J. Range Manage. 33(5):354-360.

Wolfe, M.L., L.C. Ellis and R. MaCmullen 1989. Reproductive rates of feral horses and burros. J. Wildl. Manage. 53(4):916-924.

Waring, G.H. 1979. Behavioral adaptation as a factor in the management of feral equids in symposium on the ecology and behavior of wild and feral equids, Univ. of Wyoming Laramie pp. 85-92.

HMA Map


Desatoya HMA
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GILBERT CREEK
NEW PASS/RAVEN SW
CLAN ALPINE
MOUNT AIRY
EDWARDS CREEK
DESATOYA MTN
PORTER CANYON
DESATOYA
SAN JUAN
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WSA's
Allotments
HMA's
Private Land

Appendix 1, Minimum Viable Populations

Maintaining genetic diversity is generally assumed to be important for most populations of vertebrates, the devils hole pupfish (*Cyprinodon diabolis*) is a notable exception. This species has been confined to what is effectively a small pool for 10,000 years resulting in a population that is essentially comprised of cloned individuals. However, many species of vertebrates suffer from the deleterious effects of inbreeding depression if the population size is small and isolated. Inbreeding depression is manifested as decreased individual fitness and population growth rate (Ralls and Ballou 1983; Falconer and Mackay 1996). "Based on estimates of mutability in quantitative characters (Lande 1976; Lynch 1988), Franklin (1980) and Soule (1980) recommended a minimum Ne of 500 to maintain typical levels of heritable variance. Recent experiments indicate that a large fraction of the mutational variance in quantitative characters is associated with recessive lethal and semi-lethal side effects such that the quasi-neutral, potentially adaptive fraction of mutational variance is about one-thenth as large as previously thought (Mackay etal. 1992; Lopez and lopez-Fanjul 1993a,b). Lande (1995) suggested that the Franklin-Soule number should be increased by a factor of ten." (Lande 2002).

"Recent considerations of this problem have led to the recommendation that an effective population size of approximately 1,000 individuals is needed to allow continued adaptive evolution and to avoid the accumulation of new harmful mutations. This recommendation would correspond to more than 5,000 individuals in many species. Such large populations will not be possible in many species except by increasing the connectivity among geographically separated populations over a wide area." (Allendorf and Ryman, 2002).

In harem breeding animals such as horses, an effective population will be much smaller than the census population, since matings are not random, a relatively few dominant males are responsible for the majority of matings. However, free roaming horses generally exhibit greater genetic diversity than most domestic breeds. Through the domestication process many deleterious alleles may have been purged thus allowing for greater inbreeding without the resulting deleterious effects of inbreeding depression. However, Allendorf and Ryman, (2002) assert that inbreeding depression is caused by many recessive alleles with minor deleterious effects therefore purging these numerous alleles is unlikely. Thus, a prudent manager would attempt to maintain as much genetic diversity as is practical.

"Inbreeding depression due to fixation of deleterious partially recessive mutations can be reversed, at least temporarily, by introduction of genes from unrelated individuals into an inbred population, which allows natural selection to eliminate the deleterious mutations. It can be permanently prevented by continued immigration every one or two generations of a single unrelated individual into each local breeding population regardless of its size (Lande and Barrowclough 1987). Such a plan was recently implemented for the endangered Florida panther, motivated by strong

circumstantial evidence of inbreeding depression and its low genetic divergence from other conspecific populations. Such genetic augmentation may be sufficient to reverse inbreeding effects and not too high to swamp possible local adoptions (Hedrick 1995)." (Lande, 2002)

Appendix 2 Human Food Safety Issues

The Bureau makes every effort to find suitable homes for adopted horses, unfortunately, after title has been passed, a very small percentage of the adopted horses eventually end up sold at auctions and may enter the food chain at this point. Therefore, we have adopted the following protocol to ensure public safety.

Wild horse mares treated with PZP utilizing Freund's Complete Adjuvant (FCA) would be freeze-marked for identification purposes. The Field Office would assure that these animals do not enter the adoption program for a minimum of 3 years following treatment. A field data sheet would be forwarded to the field from the National Program Office prior to treatment. This form would be used to record all pertinent data relating to identification of the animal (including photo where possible), date of treatment, type of treatment (1yr, 2yr- and adjuvant used) HMA, etc. The form and any photo's would be maintained at the field office and a copy of the completed form would be sent to Ron Hall at the National Program Office, Reno NV.

A tracking system would be maintained by the National Program Office detailing the quantity of PZP issued, the quantity used, the disposition of any unused PZP, and the number of treated mares by HMA, Field Office and State along with the freeze-mark applied by HMA. In the vast majority of cases, the released mares would never be gathered sooner than the mandatory three-year holding period. In those rare instances when, due to unforeseen circumstances, a treated mare(s) are removed from an HMA they would be maintained either in a BLM facility or a contracted Long Term Holding Facility until the expiration of the three-year holding period. In the event that it is necessary to remove treated mares, their removal and disposition would be coordinated through the National Program Office. Three years post treatment the animals may be placed into the adoption program.

Appendix 3, Population Data

Table 3. Population data**.**

Census Date	Number of Horses Counted Inside the HMA	No. Removed
1971	42	
1975	102	
1982	68	
1988	96	
1989		118
1992	109	124
1993		76
1995	182	
1996		26
1997	187	
2000	304	
2002	435	

All censuses were conducted with rotary wing aircraft. Prior to 1995 census numbers were for the CCFO portion of the HMA. Since 1989, 344 wild horses have been removed from the CCFO portion of the HMA.

The following parameters were used:

Table 4. Initial age distribution post-gather

Age Class	**Females**	**Males**
Foal	0	0
1	7	8
2	6	6
3	4	4
4	4	4
5	3	4
6	5	5
7	5	5
8	5	5
9	5	5
10-14	5	5
15-19	0	0
20^{+}	0	0

Due to the large timber component, approximately 20% of the animals would evade capture attempts. The 0 – 5 age classes are based on census data and past capture data. The 6 – 10 age classes were based on current policy to minimize the number of animals in this age bracket needed long- term storage. The $11 – 20^{+}$ would be substantially underestimated since approximately 20% of the animals in this bracket would elude capture attempts and remain in the HMA.

We do not have any specific data on foaling rates for the Desatoya's, however, it is felt that the Garfield Flat HMA, also with in this Field Office would reasonably reflect the Desatoya rates.

Table 5. Foaling Rates. Proportion of males is 0.58%

Age Class	Foaling Rate
Foal	0
1	0
2	0.52
3	0.67
4	0.76
5	0.89
6	0.76
7	0.90
8	0.88
9	0.91
10-14	0.81
15-19	0.82
20^{+}	0.75

These data were collected by M. Ashley and S. Jenkins at Garfield Flat, Nevada between 1993 and 1999. Marked females were followed for a total of 351 animal-years to generate these data on foaling rates.

We do not have any specific data on survival rates for the Desatoya's, however, it is felt that the Garfield Flat HMA, also in this Field Office would reasonably reflect the Desatoya rates.

Table 6. Age specific survival rates.

Age Class	Females	Males
Foal	0.919	0.877
1	0.996	0.950
2	0.994	0.949
3	0.993	0.947
4	0.990	0.945
5	0.988	0.942
6	0.985	0.939
7	0.981	0.936
8	0.976	0.931
9	0.971	0.926
10-14	0.947	0.903
15-19	0.870	0.830
20^{+}	0.591	0.564

These data were collected by M. Ashley and S. Jenkins at Garfield Flat, Nevada between 1993 and 1999. Marked individuals were followed for a total of 708 animal-years to generate these survival probabilities. All scenarios were run 100 times.

Proposed Action, would utilize both removals and contraceptive techniques to control the population and resulted in a median growth rate of 13.6 percent and a median average size at the end of 166 with the highest trail having an ending population of 406 horses. Over the 20 year period only 406 horses were removed and 180 treated (median trial).

Table 7. Average growth rate in 20 years, removals and contraceptives.

Lowest Trial	10.1%
10^{th} Percentile	11.2%
25^{th} Percentile	12.5%
Median Trial	13.6%
75^{th} Percentile	15.1%
90^{th} Percentile	16.4%
Highest Trial	18.2%

Table 8. Totals in 21 years, removals and contraceptives.

	Gathered	Removed	Treated
Lowest Trial	684	292	130
10th Percentile	778	319	146
25th Percentile	816	352	160
Median Trial	852	406	180
75th Percentile	894	456	193
90th Percentile	952	488	201
Highest Trial	1006	591	244

Table 9. Population size in 21 years, removals and contraceptives.

	Minimum	Average	Minimum
Lowest Trial	52	128	212
10th Percentile	100	153	230
25th Percentile	102	158	248
Median Trial	106	166	274
75th Percentile	110	175	304
90th Percentile	116	185	324
Highest Trial	130	196	391

Alternative 1 would utilize both removals and contraceptive techniques to control the population, with the population only being reduced to the upper end of the AML. This resulted in a median growth rate of 13.8% percent and a median average size at the end of 222 with the highest trail having an ending population of 445 horses. Over the 20 year period 496 horses were removed and 258 treated (median trial).

Table 10. Average growth rate in 20 years, removals and contraceptives. However, the population was only reduced to the upper AML.

Lowest Trial	9.5%
10th Percentile	11.2%
25th Percentile	12.4%
Median Trial	13.8%
75th Percentile	15.0%
90th Percentile	16.2%
Highest Trial	17.7%

Table 11. Totals in 21 years, removals only down to the upper AML, and contraceptives.

	Gathered	Removed	Treated
Lowest Trial	914	269	222
10th Percentile	1024	359	236
25th Percentile	1078	438	248
Median Trial	1128	496	258
75th Percentile	1190	562	271
90th Percentile	1232	622	282
Highest Trial	1310	717	313

Table 12. Population size in 21 years, removals only to the upper AML, and contraceptives.

	Minimum	Average	Minimum
Lowest Trial	90	195	273
10th Percentile	101	207	298
25th Percentile	104	214	320
Median Trial	108	222	343
75th Percentile	115	232	367
90th Percentile	124	238	387
Highest Trial	138	251	445

Alternative 2, would only utilize removals to control the population and resulted in a median growth rate of 20.7 percent and a median average size at the end of 162 with the highest trail having an ending population of 308 horses.

Table 13. Average growth rate in 20 years, removals only.

Lowest Trial	16.1%
10th Percentile	17.7%
25th Percentile	19.5%
Median Trial	20.7%
75th Percentile	21.7%
90th Percentile	22.9%
Highest Trial	25.9%

Table 14. Totals in 21 years, removals only.

	Gathered	Removed
Lowest Trial	407	331
10th Percentile	494	397
25th Percentile	547	436
Median Trial	596	472
75th Percentile	644	513
90th Percentile	692	553
Highest Trial	806	630

Table 15. Population size in 21 years, removals only.

	Minimum	Average	Minimum
Lowest Trial	89	145	202
10th Percentile	100	153	216
25th Percentile	103	158	222
Median Trial	107	162	239
75th Percentile	111	166	256
90th Percentile	116	171	280
Highest Trial	122	179	308

Alternative 3, would only utilize contraceptives to control the population and resulted in a median growth rate of 12.7 percent and a median size at the end of 21 years of 1206 with the highest trail having an ending population of 2158 horses. Of course well before the population reaches these magnitudes the habitat would be destroyed, most wildlife and native plats would have been extirpated and noxious non-native weeds would dominate, livestock could no longer be produced and the horses themselves would likely also be extirpated. However, we have provided the results below for academic interest.

Table 16. Average growth rate in 20 years, contraceptives only.

Lowest Trial	8.5%
10th Percentile	10.6%
25th Percentile	11.7%
Median Trial	12.7%
75th Percentile	14.0%
90th Percentile	14.7%
Highest Trial	16.1%

Table 17. Population size in 21 years contraceptives only.

	Minimum	Average	Maximum
Lowest Trial	89	280	589
10th Percentile	102	349	823
25th Percentile	105	399	1032
Median Trial	108	474	1206
75th Percentile	114	544	1495
90th Percentile	123	626	1780
Highest Trial	152	723	2158

Number of animals treated with a contraceptive. The drawback with the current contraceptive (PZP) is the relatively short control period relative to realistic gather schedules. If a long lasting contraceptive with a high efficacy rate could be developed the horse populations could in theory be managed within the target ranges without the need for removals. Again for academic interest we have presented the results below.

Table 18. Totals in 21 years, number of animals treated with contraceptives.

	Gathered	Removed	Treated
Lowest Trial	1354	0	583
10th Percentile	1708	0	717
25th Percentile	1955	0	858
Median Trial	2358	0	1014
75th Percentile	2710	0	1203
90th Percentile	3170	0	1392
Highest Trial	3698	0	1656

Alternative 4, would utilize removals only down to the upper end of the AML to control the population and resulted in a median growth rate of 19.7 percent and a median average size at the end of 261 with the highest trail having an ending population of 501 horses. Over the 20 year period 778 horses were removed.

Table 19. Average growth rate in 20 years, removals only to upper AML.

Lowest Trial	15.0%
10th Percentile	17.1%
25th Percentile	18.7%
Median Trial	19.7%
75th Percentile	21.0%
90th Percentile	22.1%
Highest Trial	24.1%

Table 20. Totals in 21 years, removals only down to upper AML.

	Gathered	Removed
Lowest Trial	665	522
10th Percentile	808	628
25th Percentile	880	685
Median Trial	982	778
75th Percentile	1058	840
90th Percentile	1157	914
Highest Trial	1279	995

Table 21. Population size in 21 years, removals down only to upper AML.

	Minimum	Average	Minimum
Lowest Trial	95	229	341
10th Percentile	102	245	379
25th Percentile	104	253	399
Median Trial	108	261	426
75th Percentile	115	270	454
90th Percentile	124	279	464
Highest Trial	141	290	501

The No Action Alternative would leave the population to its own device (no management) and resulted in a median growth rate of 19.8 percent and a median size at the end of 21 years of 4,123 with the highest trail having an ending population of 6,576 horses. Of course well before the population reaches these magnitudes the habitat would be destroyed, most wildlife and native plats would have been extirpated, noxious non-native weeds would dominate, livestock could no longer be produced and the horses themselves would likely also be extirpated. However, we have provided the results below for academic interest.

Table 22. Average growth rate in 20 years, no management, No Action Alternative.

Lowest Trial	15.6
10th Percentile	18.0
25th Percentile	18.9
Median Trial	19.8
75th Percentile	20.8
90th Percentile	21.7
Highest Trial	22.8

Table 23. Population sizes in 21 years, no management**,** No Action Alternative.

	Minimum	Average	Minimum
Lowest Trial	100	649	1987
10th Percentile	102	868	3026
25th Percentile	104	991	3341
Median Trial	107	1163	4123
75th Percentile	113	1526	5604
90th Percentile	122	1526	5604
Highest Trial	152	1723	6576

Unavoidable impacts in the form of injuries to the horses may occur during the removal process. Based on past gathers death loss is not expected to exceed 1% of the horses captured at the trap site. Potential injuries and fatalities can be limited through strict enforcement of contract specifications (Appendix 1) for safety and humane treatment of animals. BLM representatives would be monitoring the contractor's activities at all times during removal to ensure compliance with specifications and humane treatment of animals.

Some stress to the horses would be associated with the helicopter herding operations. However, after adoption the horses become accustomed to captivity.

Appendix 4, Removal Procedures

I. Methods for Removal and Safety

The methods employed during this capture operation would be either herding horses with a helicopter to a trap built with portable panels or capturing the horses using portable panels around water troughs. The Bureau of Land Management may contract with a private party for part or all of this operation. If a private party is used for this operation Bureau employee(s) would be supervising the contractor at all times during the gathering operation. The following stipulations and procedures would be followed during the contract to ensure the welfare, safety and humane treatment of wild horses and that wild horses are removed from proper areas. If capture operations are performed by Bureau personnel, the Bureau would follow the same stipulations that we require of a private contractor.

A. Roundup Procedures within Contract Area:

The Contracting Officer's Representative (COR) or Project Inspectors (PI) would determine specific roundup areas and numbers of animals within general contract areas as animal concentration, terrain, physical barriers and weather conditions dictate. Upon determination of the specific roundup areas, the COR/PI would select the general location of trap sites in which to herd the animals. Animal concentration, terrain, physical barriers and weather conditions would all be considered when selecting trap sites.

B. Motorized Equipment

l. All motorized equipment employed in the transportation of captured animals shall be in compliance with appropriate State and Federal laws and regulations applicable to the humane transportation of animals.

2. Vehicles shall be in good repair, of adequate rated capacity, and operated so as to insure that captured animals are transported without undue risk of injury.

3. Only stock trailers shall be allowed for transporting animals from traps to temporary holding facilities. Only Bobtail trucks, stock trailers, or single deck trucks shall be used to transport animals from temporary holding facilities to final destination. Sides of stock racks of transporting vehicles shall be a minimum height of 6 feet 6 inches from vehicle floor. Single deck trucks with trailers 40 feet or longer shall have 2 partition gates to separate animals. Trailers less than 40 feet shall have at least 1 partition gate to separate the animals. Each partition shall be a minimum of 6 feet high and shall have a minimum 5 feet wide swinging gate. The use of double deck trailers is unacceptable and shall not be allowed.

4. All vehicles used to transport animals to final destination shall be equipped with at least 1 door at the rear end of the vehicle which is capable of sliding either horizontally or vertically.

5. Floors of vehicles and loading chute shall be covered and maintained with a non-skid surface such as sand, mineral soil or wood shavings, to prevent the animals from slipping. This would be confirmed by a BLM employee prior to loading (every load).

6. Animals to be loaded and transported in any vehicle shall be as directed by the COR/PI and may include limitations on numbers according to age, size, sex, temperament and animal condition. A minimum of 1.4 linear foot per adult animal and .75 linear foot per foal shall be allowed per standard 8 foot wide stock trailer/truck.

The BLM employee supervising the loading of the wild horses to be transported from the trap to the temporary holding corral would require separation of small foals and weak horses from the rest, if they could be injured during the trip. Distance and condition of the road and animals would be considered in making this determination. Horses shipped from the temporary holding corral to the BLM facility would normally be separated by studs, mares and foals (including small yearlings). However, if the numbers of these classes of animals are too few in one compartment and too many in another, animals may be shifted between compartments to properly distribute the animals in the trailer. This may include placing a younger, lighter stud with the mares or a weak mare with the foals. Further separation may be required should condition of the animals warrant.

The BLM employee supervising the loading would exercise authority to off-load animals should there be too many horses on the trailer or truck.

7. The COR/PI shall consider the condition of the animals, weather conditions, type of vehicles, distance to be transported, and other factors when planning for the movement of captured animals. The COR/PI shall provide for any brand inspection or other inspection services required for the captured animals.

It is currently planned to ship all horses to the Palomino Valley facility. Communication lines have been established with the Palomino Valley personnel involved in off-loading the horses, to receive feedback on the condition of shipped horses. Should problems arise, shipping methods or separation of the horses would be changed in an attempt to alleviate the problems.

8. If the COR/PI determines that dust conditions are such that the animals could be

endangered during transportation, the contractor would be instructed to adjust speed. The maximum distance over which animals may have to be transported on dirt road is approximately 5 miles.

Periodic checks by BLM employees would be made as the horses are transported along dirt roads. If speed restrictions are placed in effect, then BLM employees would, at times, follow or time trips to ensure compliance.

C. Trapping and Care

1. The helicopter shall be used in such a manner that bands of horses would remain together. Foals shall not be left behind.

To avoid adverse impacts to golden eagles the helicopter will be operated in a manner to avoid flying near aeries.

To avoid adverse impacts to water quality and riparian areas trap sites will be located in upland situations, along existing roads. Since trap sites are located along existing roads threatened, endangered, sensitive plant or special status plant species are not likely to be impacted, however, these sites will be surveyed and if threatened, endangered, sensitive or special status plant species are present another location will be used for a trap site.

The CCFO may use an observation helicopter to supervise the use of the project helicopter. In the absence of an observation helicopter a saddle horses may be used to place a BLM observer on a point overlooking the area of the helicopter herding operations. Mares would be checked soon after capture to determine if they are nursing. If nursing mares are captured without foals intensive monitoring would be conducted to identify the reason(s) foals are being abandoned and a solution would be developed. The health and well being of the captured animals are paramount and foals would not be left behind.

2. The rate of movement and distance the animals travel shall not exceed limitations set by the COR/PI who would consider terrain, physical barriers, weather, condition of the animals and other factors.

BLM would not allow horses to be herded more than 12 miles. The COR/PI may decrease the distance moved should the route to the trap site be steep or rocky enough to pose a danger or cause avoidable stress. Animal condition would also be considered in making distance and speed restrictions.

Special attention would be given to avoiding physical hazards such as fences. Map 1 shows locations of fences and any other potential hazards.

3. It is estimated that 2 trap locations would be required to accomplish the work. All trap locations and holding facilities must be approved by the COR/PI prior to construction. Proposed trap sites and holding facilities would be inventoried prior to construction in order to avoid those areas where cultural resources exist. The contractor may also be required to change or move trap locations as determined by the COR/PI. All traps and holding facilities not located on public land must have prior written approval of the landowner.

If tentative trap sites (Map 1) are not located near enough to the concentrations of horses, then the trap site would not be approved. The COR/PI would move the general location of the trap closer to the horses. Trap sites would be located outside of the WSA. Trap sites would not be approved where barbed wire fences are used as wings, wing extensions, or to turn the horses, during herding, toward the trap.

4. All traps, wings and holding facilities shall be constructed, maintained and operated to handle the animals in a safe and humane manner and be in accordance with the following:

a. Traps and holding facilities shall be constructed of portable panels, the top of which shall not be less than 72 inches high, the bottom rail of which shall not be more than 12 inches from the ground level. All traps and holding facilities shall be oval or round in design.

b. The loading chute shall also be a minimum of 6 feet high.

c. All runways shall be a minimum of 20 feet long and a minimum of 6 feet high.

d. Wings shall not be constructed out of barbed-wire or other materials injurious to animals and must be approved by the COR/PI.

e. All crowding pens including the gates leading to the runways shall be covered with material which prevents the animals from seeing out (plywood, burlap, etc.) and shall be covered a minimum of 1 foot to 5 feet above ground level. Eight linear feet of this material shall be capable of being removed or let down to provide a viewing window.

5. No fence modification would be made without authorization from the COR/PI. The contractor shall be responsible for restoration of any fence modification which he has made.

If the route the contractor wishes to herd horses passes through a fence, the contractor

would be required to roll up the fencing material and pull up the posts to provide at least one-eighth mile gap. The standing fence on each side of the gap would be well-flagged for a distance of 300 yards from the gap on each side.

6. When dust conditions occur within or adjacent to the trap or holding facility, the contractor shall be required to wet down the ground with water.

7. Alternate pens, within the holding facility shall be furnished by the contractor to separate mares with small foals, sick and injured animals, and estray animals from the other horses. Animals shall be sorted as to age, number, size, temperament, sex, and condition when in the holding facility so as to minimize injury due to fighting and trampling.

As a minimum, studs would be separated from the mares and foals when the animals are held overnight.

8. Animals shall be transported to final destination from temporary holding facilities within 24 hours after capture unless prior approval is granted by the COR/PI for unusual circumstances. Animals shall not be held in traps or temporary holding facilities on days when there is no work being conducted except as specified by the COR/PI. The contractor shall schedule shipments of animals to arrive at final destination between 6:00 a.m. and 4:00 p.m.

9. The contractor shall provide animals held for 5 hours or more in the traps or holding facilities with a continuous supply of fresh clean water at a minimum of 10 gallons per animal per day. Animals held for 10 hours or more in the traps or holding facilities shall be provided good quality hay at the rate of not less than 2 pounds of hay per 100 pounds of estimated body weight per day.

10. It is the responsibility of the contractor to provide security to prevent loss, injury or death of captured animals until delivery to final destination.

11. The contractor shall restrain sick or injured animals if treatment by the government is necessary. The COR/PI would determine if injured animals must be destroyed and provide for destruction of such animals. The contractor may be required to dispose of the carcasses as directed by the COR/PI.

12. When refueling, the helicopter shall remain a distance of at least l,000 feet or more from animals, vehicles (other than fuel truck), and personnel not involved in refueling.

13. Mares and foals would be paired up soon after capture and separated from other adult

horses. Mares that are within the target age group for removal would be shipped to PVC with their foal. Foals of older mares (mares older than the ones selected for removal) that are old enough to wean, would be weaned and shipped to PVC. While holding animals at temporary corrals every effort would be made to pair up mares with foals. Any foals that do not pair up with a mare would be shipped to PVC.

14. Foals of older mares which are too young to wean would be released back into the HMA with their mare. In order to minimize stress to the foals, older mares and their foals would be released separately from other mares and stallions. Depending upon the situation they may be released prior to the other animals or after the other animals have been released. Also, we may transport the mares with very young foals in a stock trailer to areas close to their core areas when feasible. The objective would be to maximize the period of time between releasing small foals and other animals. Also, mares with foals would be released in small groups to minimize the likelihood of the adult horses running off too quickly for the foals to keep up.

15. Following the release of animals from corrals or trailers, the area surrounding the release site would be monitored to determine the success of the release prior to the contractor moving to another area or the termination of the task order.

II. Disposition of Removed Animals

The wild horses and burros would be sent to Palomino Valley Wild Horse and Burro Placement Center to be processed for adoption.

Impounded, privately owned animals would be processed as outlined in the Bureau of Land Management, Nevada State Office Instruction Memoranda NV-84-116 and NV-85-416.

III. Responsibility

The Field Office Managers are responsible for maintaining and protecting the health and welfare of the wild horses. To ensure the contractor's compliance with the contract stipulations, the COR and PIs all from the CCFO and/or BMFO , would be on site. Also, the Assistant Field Managers and Field Managers are very involved with guidance and input into this removal plan and with contract monitoring. The health and welfare of the animals is the overriding concern of the Field Office Managers, Assistant Field Office Managers, COR and PIs.

The COR and/or PI would constantly, through observation, evaluate the contractor's ability to perform the required work in accordance with the contract stipulations. Compliance with the

contract stipulations would be through issuance of written instructions to the contractor, stop work orders and default procedures should the contractor not perform work according to the stipulations.

Prior to issuance of the "Notice to Proceed" to the contractor, the COR and PIs would inspect the equipment to be used during the contract, to insure the equipment meets or exceeds the standards contained in the contract stipulations. Prior (less than 20 days) to the start of the contract and constantly during the course of the contract the COR and/or PIs would evaluate the conditions which may cause undue stress to the animals. The factors considered would include animal condition, prevailing temperatures, drought conditions, soil conditions, topography, animal distribution, distance animals travel to water, quantity of available water and condition of roads that animals are to be transported over. These factors would be evaluated to determine if additional constraints other than those already discussed above, need be initiated in order to safely capture and transport the animals (i.e. veterinarian present, or delay of capture operations). This is of special concern during this year of drought which may intensify the impact of removal operations on the animals and the roads.

VII. Finding of No Significant Impact and Decision Record

Decision: Implement the Desatoya HMAP and Capture Plan Update as identified in the Proposed Action and using the Procedures detailed in Appendix 4. The subject plan directs management actions for the Desatoya HMA. The major actions in the subject plan include limiting vegetation utilization to 55%, providing habitat for wild horses and wildlife, outlining studies to assure that Land Use Plan objectives are being met, removing excess wild horses and maintaining and improving riparian areas. The selected alternative is the proposed action, which contains the above mentioned features.

Finding of No Significant Impacts: Based on the analysis of potential environmental impacts contained in the environmental assessment, impacts are not expected to be significant and an environmental impact statement is not required.

Rational for decision: The Carson City Consolidated Resource Management Plan stated that Herd Management Area Plans would guide the management of wild horses through the determination of proper horse use levels. By maintaining the population of wild horses between 127 and 180 the vegetation utilization levels would be maintained at sustainable levels ($\leq$ 55% use). This action is not significant because a population of wild horses would be maintained within the HMA and the vegetation, wildlife and livestock would not be adversely impacted.

Using chemical or mechanical contraceptive techniques to decrease the rate of increase would result in fewer animals captured and placed into the adoption program. Contraceptive techniques would allow greater intervals between gathers which would result in less disturbances and stress to the horses. These actions are not significant because they lie within the scope of managing horses at the minimum feasible level. If contraceptive techniques are not used, succeeding removals would need to be conducted more frequently and additional animals would need to be placed into the adoption program.

Unavoidable impacts in the form of injuries to the horses may occur during the removal process. Death loss is not expected to exceed 1% of the horses captured at the trap site. Some stress to the horses would be associated with the capture operations, however, after adoption the horses become accustomed to captivity. Because the loss of animals due to accidents is low the impacts involved in the capture operation are not significant.

The decision to implement the Desatoya HMAP and Capture Plan Update is in conformance with the Carson City Field Office Consolidated Resource Management Plan, Shoshone Eureka RMP/EIS, and would restore the range to a thriving ecological balance and prevent a deterioration of the range, as analyzed in the subject EA, in accordance with Sec. 3(b) of the Wild Free-Roaming Horses and Burros Act, as amended, 16 U.S.C. 1333(b) (1989). This would result in reduced soil erosion and improve the physical condition of wild horses.

The proposed actions would not adversely impact air quality, ACECs, cultural resources, farmlands, floodplains, Native American religious concerns, T&E species, wastes, water quality, wetlands and riparian zones, wild and scenic rivers, migratory birds or wildernesses.

The capture portion of this plan is issued Full Force and Effect to allow for the immediate removal of excess wild horses from the Desatoya HMA to reach the established Appropriate Management Level (AML). Immediate removal of wild horses in excess of the AML is necessary to restore the range to a thriving natural ecological balance and to avert the imminent overgrazing caused by excess wild horses within the HMA. The Full Force and Effect determination is in accordance with the regulation at 43 CFR 4770.3(c).

Within 30 days of receipt of this decision, you have the right of appeal to the Board of Land Appeals, Office of the Secretary, in accordance with the regulations at 43 CFR, Part 4, Subpart E. If an appeal is taken, you must follow the procedures outlined in the enclosed form 1842-1, Information of Taking Appeals to the Board of Land Appeals. Within 30 days after you appeal, you are required to provide a Statement of Reasons to the Board of Land Appeals and a copy to the Regional Solicitor's Office listed in Item 3 on Form 1842-1. Please provide this office with a copy of your Statement of Reasons. Copies of your Appeal and the Statement of Reasons must also be served upon any parties adversely affected by this decision the Appellant has the burden of showing that the decision appealed from is in error.

If the appellant wishes to file a petition (request) (pursuant to 43 CFR 4.21) for a Stay (suspension) of the effectiveness of this Decision during the time that the appeal is being reviewed by the Interior Board of Land Appeals, the Petition for Stay must accompany the Notice of Appeal. A petition for a Stay is required to show sufficient justification based on the standards for obtaining a Stay. Copies of the Notice of Appeal and Petition for a Stay must also be submitted to the appropriate Office of the Solicitor (see 43 CFR 4.413). If the appellant requests a Stay, the appellant has the burden of proof to demonstrate that a Stay should be granted.

Standards for Obtaining a Stay
Except as otherwise provided by law or by other pertinent regulation, a Petition for a Stay of a Decision pending appeal shall show sufficient justification based on the following standards:

1. The relative harm to the parties if the stay is granted or denied,
2. The likelihood of the appellant's success on the merits,
3. The likelihood of immediate and irreparable harm if the stay is not granted, and
4. Whether the public interest favors granting the stay

Approved by:

_____ _____

Daniel Jacquet
Assistant Manager, Renewable Resources
Carson City Field Office

Date